Oracle® Application Server

Installation Guide

Release 4.0.8.1 for Sun SPARC Solaris 2.x

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ORACLE®

Oracle Application Server Release 4.0.8.1 Installation Guide for Sun SPARC Solaris 2.x

Part No. A58755-03

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Preface

This chapter contains general documentation information about Oracle Application Server, including other books available, conventions used in this manual, and contact information at Oracle.

Audience

This installation guide is intended for database administrators and others responsible for installing Oracle products. You should be familiar with client/server relationships and database concepts.

The Oracle Application Server Documentation Set

This table lists the Oracle Application Server documentation set.

Title of Book	Part No.
Oracle Application Server 4.0.8 Documentation Set	A66971-03
Oracle Application Server Overview and Glossary	A60115-03
Oracle Application Server Installation Guide for Sun SPARC Solaris 2.x	A58755-03
Oracle Application Server Installation Guide for Windows NT	A58756-03
Oracle Application Server Administration Guide	A60172-03
Oracle Application Server Security Guide	A60116-03
Oracle Application Server Performance and Tuning Guide	A60120-03
Oracle Application Server Developer's Guide: PL/SQL and ODBC Applications	A66958-02
Oracle Application Server Developer's Guide: JServlet Applications	A73043-01
Oracle Application Server Developer's Guide: LiveHTML and Perl Applications	A66960-02

Title of Book	Part No.
Oracle Application Server Developer's Guide: EJB, ECO/Java and CORBA Applications	A69966-01
Oracle Application Server Developer's Guide: C++ CORBA Applications	A70039-01
Oracle Application Server PL/SQL Web Toolkit Reference	A60123-03
Oracle Application Server PL/SQL Web Toolkit Quick Reference	A60119-03
Oracle Application Server JServlet Toolkit Reference	A73045-01
Oracle Application Server JServlet Toolkit Quick Reference	A73044-01
Oracle Application Server Cartridge Management Framework	A58703-03
Oracle Application Server 4.0.8.1 Release Notes	A66106-04

Conventions

This table lists the typographical conventions used in this manual.

Convention	Example	Explanation
bold	**oas.h** **owsctl** **wrbcfg** **www.oracle.com**	Identifies file names, utilities, processes, and URLs
italics	*file1*	Identifies a variable in text; replace this place holder with a specific value or string.
angle brackets	`<filename>`	Identifies a variable in code; replace this place holder with a specific value or string.
courier	`owsctl start wrb`	Text to be entered exactly as it appears. Also used for functions.
square brackets	`[-c string]`	Identifies an optional item.
	`[on|off]`	Identifies a choice of optional items, each separated by a vertical bar (|), any one option can be specified.
braces	`{yes|no}`	Identifies a choice of mandatory items, each separated by a vertical bar (|).
ellipses	n,...	Indicates that the preceding item can be repeated any number of times.

The term "Oracle Server" refers to the database server product from Oracle Corporation.

The term **"oracle"** refers to an executable or account by that name.

The term "*oracle*" refers to the owner of the Oracle software.

Technical Support Information

Oracle Global Support can be reached at the following numbers:

- In the USA: **Telephone: 1.650.506.1500**

- In Europe: **Telephone: +44 1344 860160**

- In Asia-Pacific: **Telephone: +61. 3 9246 0400**

Please prepare the following information before you call, using this page as a check-list:

❏ your CSI number (if applicable) or full contact details, including any special project information

❏ the complete release numbers of the Oracle Application Server and associated products

❏ the operating system name and version number

❏ details of error codes and numbers and descriptions. Please write these down as they occur. They are critical in helping WWCS to quickly resolve your problem.

❏ a full description of the issue, including:

  - **What** - What happened? For example, the command used and its result.

  - **When** - When did it happen? For example, during peak system load, or after a certain command, or after an operating system upgrade.

  - **Where** - Where did it happen? For example, on a particular system or within a certain procedure or table.

  - **Extent** - What is the extent of the problem? For example, production system unavailable, or moderate impact but increasing with time, or minimal impact and stable.

❏ Keep copies of any trace files, core dumps, and redo log files recorded at or near the time of the incident. WWCS may need these to further investigate your problem. For a list of trace and log files, see "Configuration and Log Files" in the *Administration Guide*.

For installation-related problems, please have the following additional information available:

❑ listings of the contents of $ORACLE_HOME (Unix) or %ORACLE_HOME% (NT) and any staging area, if used.

❑ installation logs (**install.log**, **sql.log**, **make.log**, and **os.log**) typically stored in the **$ORACLE_HOME/orainst** (Unix) or **%ORACLE_HOME%\orainst** (NT) directory.

Documentation Sales and Client Relations

In the United States:

■ To order hardcopy documentation, call Documentation Sales: **1.800.252.0303.**

■ For shipping inquiries, product exchanges, or returns, call Client Relations: **1.650.506.1500.**

In the United Kingdom:

■ To order hardcopy documentation, call Oracle Direct Response: **+44 990 332200.**

■ For shipping inquiries and upgrade requests, call Customer Relations: **+44 990 622300.**

Reader's Comment Form

Oracle Application Server Installation Guide for Sun SPARC Solaris 2.x
Part No. A58755-03

Oracle Corporation welcomes your comments and suggestions on the quality and usefulness of this publication. Your input is an important part of the information used for revision.

- Did you find any errors?

- Is the information clearly presented?

- Do you need more information? If so, where?

- Are the examples correct? Do you need more examples?

- What features did you like most about this manual?

If you find any errors or have suggestions for improvement, please indicate the topic, chapter, and page number below:

Please send your comments to:

Oracle Application Server Documentation Manager
Oracle Corporation
500 Oracle Parkway
Redwood Shores, CA 94065

If you would like a reply, please provide your name, address, and telephone number below:

Thank you for helping us improve our documentation.

x

1

Pre-Installation

This chapter contains required hardware and software, database integration information, and supported configurations. Also discussed in this chapter are pre-installation tasks, such as setting up a proper environment using variables, which must be performed for a successful installation.

There are some environment variables discussed in this chapter which must be set during installation, but there are many more environment variables available to you in your working environment. For a discussion of these, see Appendix C, "Environment Variables".

> **Note:** If you want to configure Oracle Application Server to be used with the Enterprise Manager, you should install the Enterprise Manager first. See Appendix A, "Integration with Enterprise Manager" for information.

Contents

- Hardware Requirements
- Software Requirements
- Certified Software
- Using Oracle Application Server with a Database
- Multiple-Node Site
- Pre-Installation Tasks

Hardware Requirements

Hardware Item	Required
CPU	A SPARC processor
Memory	128 MB
Disk Space	400 MB
Swap Space	256 MB

Software Requirements

Software Item	Version
Operating System	Solaris 2.5.1 with the following patches:
	■ 106529-04 (SunOS 5.5.1 shared library patch for C++)
	■ 2_5_1_y2000_ALL_tar.Z (2.5.1 Y2K cluster)
	■ 2_5_1_Recommended_tar.Z (2.5.1 recommended cluster)
	Solaris 2.6 with the following patches:
	■ 105591-06 (SunOS 5.6 shared library patch for C++)
	■ 105568-13 (SunOS 5.6 /usr/lib/libthread.so.1 patch)
	■ 106029-03 (SunOS 5.6 /usr/ccs/bin/sccs and /usr/ccs/bin/make patch)
	■ 107357-02 (SunOS 5.6 Compiler Common 5.0: Patch C 5.0, C++ 5.0, F77 5.0, F90 2.0)
	■ 2_6_y2000_ALL_tar.Z (2.6 Y2K cluster)
	■ 2_6_Recommended_tar.Z (2.6 recommended cluster)
Browser	Netscape Communicator: 4.51, 4.6
	(JDK 1.1.6 compliant browsers)

Certified Software

Software Item	Version
HTTP Listeners	Oracle Listener 4.0.8.0.0 (Spyglass 2.14) Netscape Enterprise Server 3.6.2
	Apache 1.3.6
Oracle RDBMS	7.3.4 8.0.5.1 8.1.5
JAVA Developer Kit (JDK)	1.1.6

Using Oracle Application Server with a Database

Selecting an ORACLE_HOME

What is an ORACLE_HOME?

ORACLE_HOME is the root or base directory in which Oracle software is installed. Oracle Application Server cannot share the same ORACLE_HOME with any other Oracle products. If you already have an Oracle database or earlier versions of Oracle Application Server, then Oracle Application Server 4.0.8 must be installed in a different ORACLE_HOME directory. For more information about environment variables, see Appendix C, "Environment Variables".

> **Note:** Oracle Application Server 4.0.8 cannot be installed in the same ORACLE_HOME as **any** other Oracle products including RDBMS and earlier versions of Oracle Application Server. Hence, during Oracle Application Server 4.0.8 installation, you need to specify a different ORACLE_HOME.

What are the Required Oracle Products?

The following table lists the required installed Oracle products and minimum release levels for using Oracle Application Server with an Oracle database.

Table 1–1   Installed Oracle products

Product	Minimum Release	Installed Automatically?
Oracle RDBMS	7.3.4	No
OTS	8.0.5	Yes (Enterprise edition)
PL/SQL	2.1.6	No
SQL*Net	8.0.5	Yes
TCP/IP Protocol Adaptor	8.0.5	Yes
Server Manager (line mode)	3.0.5	Yes

Note: There are no required Oracle products for installing Oracle Application Server as a standalone Internet server.

Remote Database Installation

To access an Oracle database on a remote machine, install the products listed above on the remote machine.

On your local machine, you must also install SQL*Net and the TCP/IP Protocol Adapter provided on the Oracle Application Server CD.

Local Database Installation

To install Oracle Application Server as a stand-alone Internet server, and to access a database on your local machine, you only need to install an Oracle database and PL*SQL.

> **Note:**   To use either Oracle8 or the Multi-Threaded Server option to connect to a local database, install SQL*Net 2.3 and the TCP/IP Protocol Adapter, which are bundled with Oracle Application Server Release 4.0.8.

Multiple-Node Site

Oracle Application Server can be installed as a single-node, where all components are installed on a single computer; or as a multi-node, which consists of a primary-node installed on one computer and one or more remote-nodes installed on different computers. Each remote node must have Oracle Application Server installed.

> **Note:** An Oracle Application Server site must reside within one subnet.

Oracle Application Server is made up of several components, each of which may be run on different machines in a network. Three advantages of distributing processes on different machines are performance, scalability, and flexibility.

See the *Oracle Application Server Performance and Tuning Guide* for additional information.

Pre-Installation Tasks

The following tasks must be performed before starting the installation:

1. Select a UNIX user for Oracle Application Server.

   - Oracle8 (or non-database) users can use their existing user account or create a new user.

   - Oracle7 database users must create a new user.

   If you create a new user and a new ORACLE_HOME, set the ORACLE_HOME environment variable in your shell initialization file (**.cshrc, .profile,** or **.login**) to point to the new directory.

2. Set permission codes for file creation for the Oracle Application Server user. The files created by this user should be "read only" for security purposes. This is accomplished by setting the **umask** value in the user startup file (**.profile, .login**, or **.cshrc**) to 022.
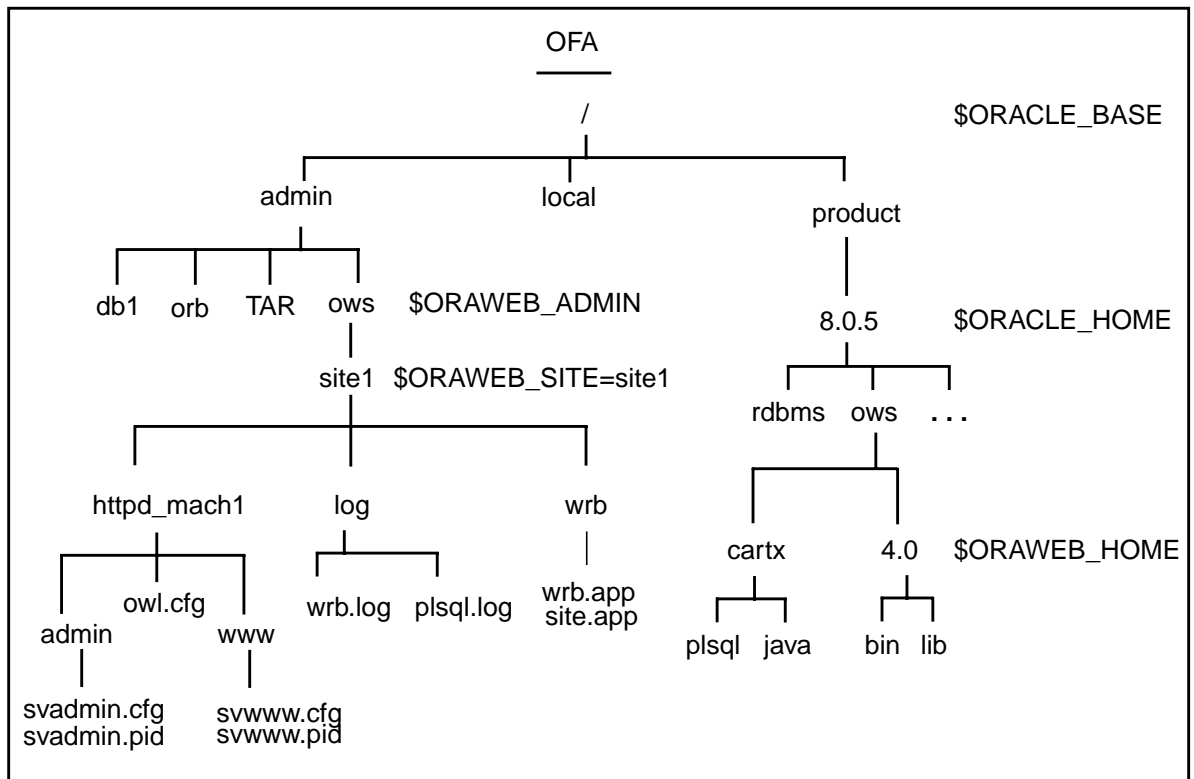
3. Determine directory structure.

   During installation, you will be asked whether you want to use an Optimal Flexible Architecture (OFA) directory structure or a non-OFA directory structure.

   Optimal Flexible Architecture (OFA), is a directory structure that allows you to easily maintain administration and upgrading tasks for multiple Oracle products.

The non-OFA directory structure is a user-defined directory structure. If you want to create your own structure, choose Non-OFA when you are prompted during installation.

> **Note:** If you have the ORACLE_BASE environment variable set, the Installer will automatically assume you want an OFA-compliant installation. If you do not want an OFA installation, unset ORACLE_BASE and rerun the Installer.

Figure 1–1 shows the OFA directory structure on a single or primary node. If you choose to distribute your installation over several machines, you will install one primary node and one or more remote nodes.

Figure 1–1   OFA directory structure (primary node)

A remote node installation directory structure contains a subset of the primary node directory structure. Configuration files are not present on the remote node.

Figure 1–2 shows the directory structure for OFA compliant and non-OFA compliant non-RDBMS installations:

Figure 1–2   Non-RDBMS directory structure
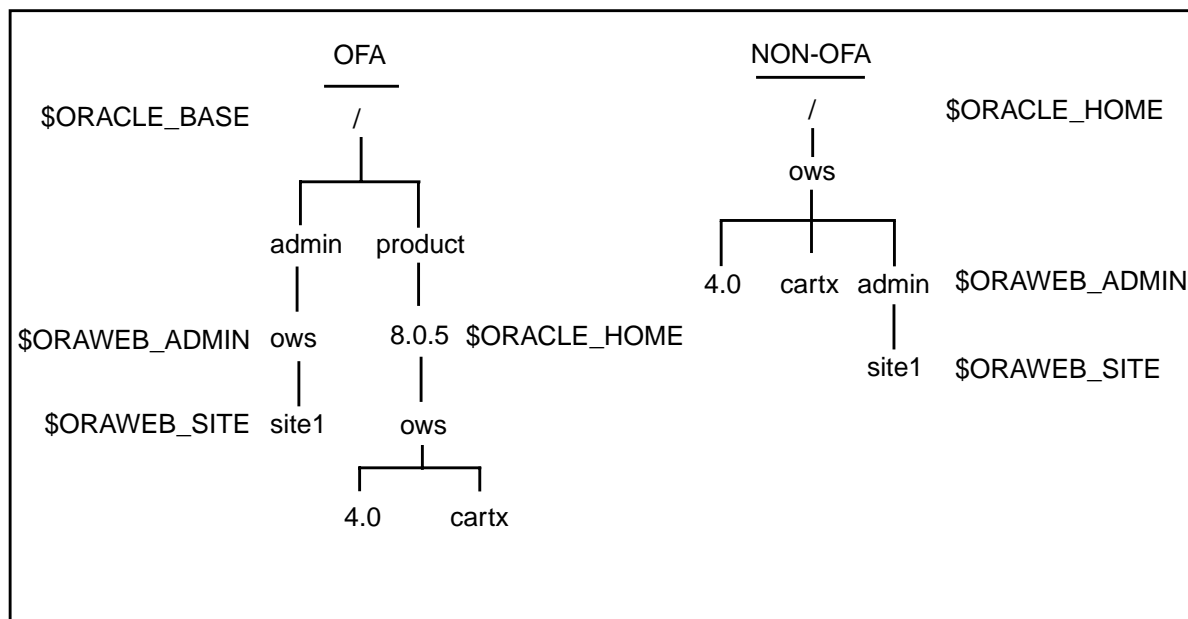
4. Reset ORACLE_BASE environment variable. (Non-OFA only.)

   If you are installing Oracle Application Server in a non-OFA structure you must ensure that the ORACLE_BASE environment variable is not set. To verify, enter:

   ```
   echo $ORACLE_BASE
   ```

   To reset the $ORACLE_BASE variable, enter the following:

   ```
   unsetenv ORACLE_BASE
   ```

5. Set ORACLE_TERM environment variable.

   This environment variable must be set before installation. ORACLE_TERM specifies the terminal definition resource file to be used with the Installer. If ORACLE_TERM is not set, the Installer uses the value of the UNIX environment variable TERM and searches for an equivalent ORACLE_TERM resource file. For a list of common ORACLE_TERM settings on Sun SPARC Solaris 2.x, see "ORACLE_TERM" on page C-2.

6. Set the TNS_ADMIN environment variable (remote database only) to the location of the **tnsnames.ora** file.

You must set the TNS_ADMIN variable before installation if you plan to use Oracle Application Server with a remote database. Your database is remote if either of the following is true:

7. Choose network ports.

During installation, you will be asked to select network ports (or accept the defaults) for several listeners. Table 1–2 lists the listeners, a short description, and the defaults given during installation:

Table 1–2 Port numbers

Listener	Purpose	Default Port Number
Node Manager Listener	Used for site management tasks such as adding and deleting listeners, configuring applications and cartridges, and stopping and starting the WRB.	8888
Administration Utility Listener	Used when running administration utilities such as the log analyzer. Also used to when running samples and demos.	Node Manager port plus 1 (For example, if you accept the default Node Manager port **8888**, the Administration Utility port will be **8889**.)
Oracle Web Listener	Used for general usage requests.	80 (Oracle strongly recommends using this default port number.)
Boot Port	This port is used by the name server. (The Installer uses the boot port you specify and the next two consecutive ports. For example, if you select port 2649, be sure that ports 2650 and 2651 are also available.)	2649

The valid range of port numbers is between 1 and 65535. Port numbers lower than 1024 are considered to be reserved. If you have a port number lower than 1024, you must log in as **root** to start up the listener.

2

Installation Procedures

Installation of Oracle Application Server is divided into two stages. First, you must start the Oracle Installer, the tool that guides you through the installation process. The second stage is the installation of Oracle Application Server itself, a process which has several options.

Contents

- Starting the Oracle Installer
- Installation Procedures
- Reinstallation Options
- Automatic Startup
- Removing Oracle Application Server

Starting the Oracle Installer

At any time during the installation, you can select the Help button to receive additional information about the installation forms.

> **Note:** Oracle Application Server 4.0.8 cannot be installed in the same ORACLE_HOME as **any** other Oracle products including RDBMS and earlier versions of Oracle Application Server. Hence, during Oracle Application Server 4.0.8 installation, you need to specify a different ORACLE_HOME.

Installation Log File

To view the log file for the installation, see:

$ORACLE_HOME/orainst/install.log

> **Security Issue:** The log file created during installation contains the admin password. Oracle Application Server sets the permission on the log file so that only the admin user can read it.

Installation Steps

1. Stop all Oracle processes and services (for example, the Oracle RDBMS).

2. Mount the installation CD-ROM.

   The Oracle Product Installation CD-ROM is in RockRidge format. If you are using the Solaris Volume Management software (installed by default on Sun SPARC Solaris 2.x), the CD-ROM is mounted automatically to **/cdrom/oracle_app_server** when you put it into the disk drive.

   If you are not using the Solaris Volume Management software, you must mount the CD-ROM manually. You must have root privileges to mount or unmount the CD-ROM manually. Be sure to unmount the CD-ROM before removing it from the drive.

   Mounting the CD-ROM manually:

   a. Place the Product Installation CD-ROM in the CD-ROM drive.

   b. Log in as the root user and create a CD-ROM mount point directory:

   ```
   $ su root
   # mkdir mount_point_directory
   ```

   c. Mount the CD-ROM drive on the mount point directory and exit the root account:

   ```
   # mount options device_name mount_point_directory
   # exit
   ```

   The following example mounts the CD-ROM manually on **/cdrom**, without using the Solaris Volume Management software:

   ```
   $ su root
   # mkdir /cdrom
   # mount -r -F hsfs device_name /cdrom
   ```

```
# exit
```

3. Run the Installer from the CD-ROM.

> **Warning:** Be sure you are not logged in as the root user when you start the Installer (orainst).

   a. Log in as the Oracle Application Server user and change to the **orainst** directory on the CD-ROM:

   ```
   $ cd mount_point_directory/oracle_app_server/oracle/orainst
   ```

   b. Verify that either ORACLE_TERM or TERM is set to the appropriate value for your terminal. (If both are set incorrectly, the installer will not load.) See the pre-installation chapter for valid values. To check the value for ORACLE_TERM, for example, enter:

   ```
   $ echo $ORACLE_TERM
   ```

   A list of common terminal values can be found in Table C–1, "ORACLE_TERM values".

   c. Start the Installer.

   In Motif mode:

   ```
   $ ./orainst /m
   ```

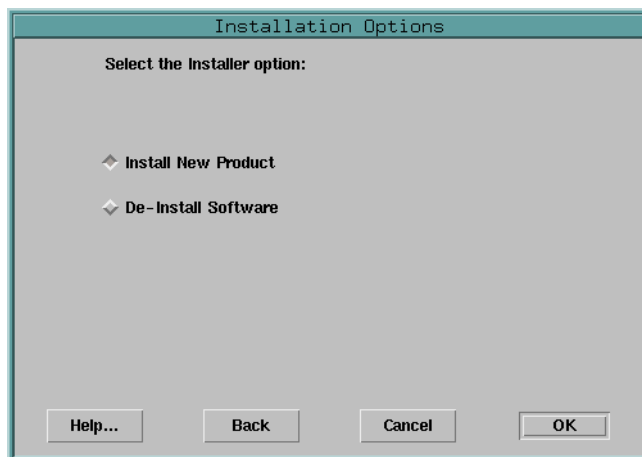   In character mode:

   ```
   $ ./orainst /c
   ```

   > **Note:** For information about navigating through an installation in character mode, see "Navigating the Installer in Character Mode" on page B-5.

4. Review the README.FIRST file.

   The Installer automatically displays last-minute product updates in the **README.FIRST** file.

5. Choose installation option.

Figure 2–1   Installation Options screen

- **Install New Product** - installs the complete product, including all configu-ration files, using either OFA or non-OFA standards.

- **De-Install Software** - removes software from your system.

6. Choose whether or not to use Optimal Flexible Architecture (OFA). The default is No.

    (You will only receive this screen if the ORACLE_BASE environment variable is not set.)

Figure 2–2   OFA screen
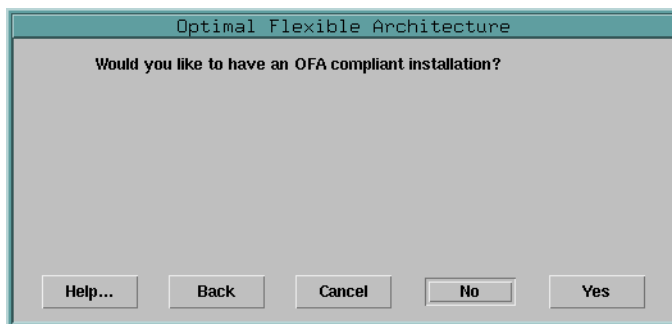
Directory Structure

Oracle Application Server gives you two directory structure options, OFA or non-OFA.

OFA (Optimal Flexible Architecture) is a logical division of product and configuration files. In this structure, you can easily upgrade product files without affecting configuration files.

Under an OFA directory structure, you define ORACLE_BASE as the directory where you want to install Oracle products. A product directory (**/ORACLE_BASE/product**) and a configuration directory (**/ORACLE_BASE/admin**) are created under ORACLE_BASE. In the **product** directory, you will find ORACLE_HOME, and all product files. In the **admin** directory, you will find configuration files and log files.

> **Note:** If you have the ORACLE_BASE environment variable set, the Installer will automatically assume you want an OFA-compliant installation. If you do not want an OFA installation, unset your environment variable and rerun the Installer.

If you installed the database according to the OFA structure, you should install Oracle Application Server using the OFA structure as well using the following instructions:

a. Select Yes when asked if you would like to have an OFA-compliant installation. This option creates all the default configuration files under the following directory:

   $ORACLE_BASE/admin/ows/

b. Set the ORACLE_BASE environment variable in addition to ORACLE_HOME, ORAWEB_HOME, and ORAWEB_SITE environment variables before starting Oracle Application Server or the Web Request Broker (WRB).

"Non-OFA" indicates that the product is installed in a user-defined directory structure. Unlike the OFA directory structure, the non-OFA structure places all product and configuration files under ORACLE_HOME.

> **Note:** If your database is not installed according to OFA stan-
> dards, you must select No when asked if you would like to have an
> OFA-compliant installation, or Oracle Application Server will not
> be able to connect to your database.

If you choose to use a non-OFA structure, default configuration files are created under:

$ORACLE_HOME/ows/admin

Each listener will have its own separate directory structure under:

$ORAWEB_ADMIN/$ORAWEB_SITE/httpd_machine_name/

All configuration files for the Web Request Broker will be located in the follow-
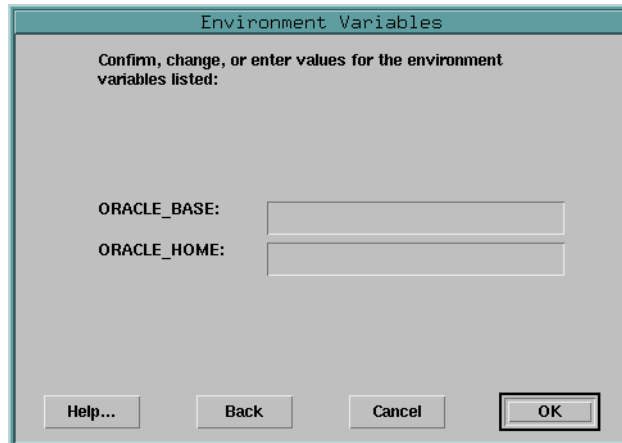ing directory:

$ORAWEB_ADMIN/$ORAWEB_SITE/wrb/

IF YOU SELECT:

- **NO** - skip to step 8.
- **YES** - continue.

7. Set installation environment variables.

(You will only receive this screen if you selected an OFA-compliant installation.)

Figure 2–3   Environment Variables

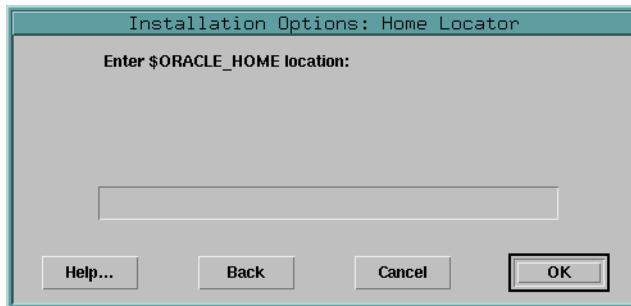In an OFA-compliant installation, you are asked to enter the ORACLE_BASE and ORACLE_HOME directories.

For information about what ORACLE_HOME you should use, see "Selecting an ORACLE_HOME" on page 1-3.

These environment variables refer to the directories which will serve as the root or base of the Oracle Application Server files.

Skip to step 9.

8. Enter the ORACLE_HOME location.

Figure 2–4   ORACLE_HOME location

```
 ┌─────────────────────────────────────────────────────┐
 │        Installation Options: Home Locator            │
 ├─────────────────────────────────────────────────────┤
 │    Enter $ORACLE_HOME location:                      │
 │                                                       │
 │                                                       │
 │                                                       │
 │    ┌───────────────────────────────────────────┐    │
 │    │                                           │    │
 │    └───────────────────────────────────────────┘    │
 │                                                       │
 │  ┌────────┐   ┌────────┐   ┌────────┐   ┌────────┐   │
 │  │ Help…  │   │  Back  │   │ Cancel │   │   OK   │   │
 │  └────────┘   └────────┘   └────────┘   └────────┘   │
 └─────────────────────────────────────────────────────┘
```

The Installer prompts you for the location of the ORACLE_HOME variable.

> **Note:** Oracle Application Server 4.0.8 cannot be installed in the same ORACLE_HOME as **any** other Oracle products including RDBMS and earlier versions of Oracle Application Server. Hence, during Oracle Application Server 4.0.8 installation, you need to specify a different ORACLE_HOME.

For information about what ORACLE_HOME you should use, see "Selecting an ORACLE_HOME" on page 1-3.
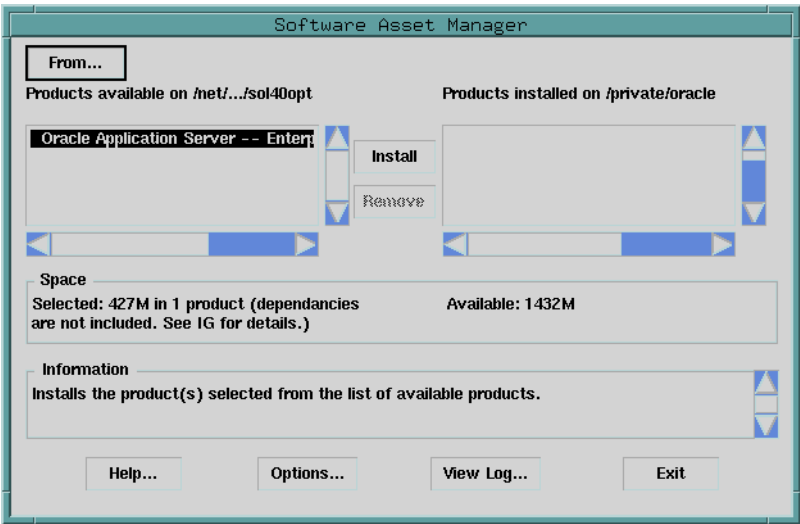
9. Select the language.

Figure 2–5   Language selection
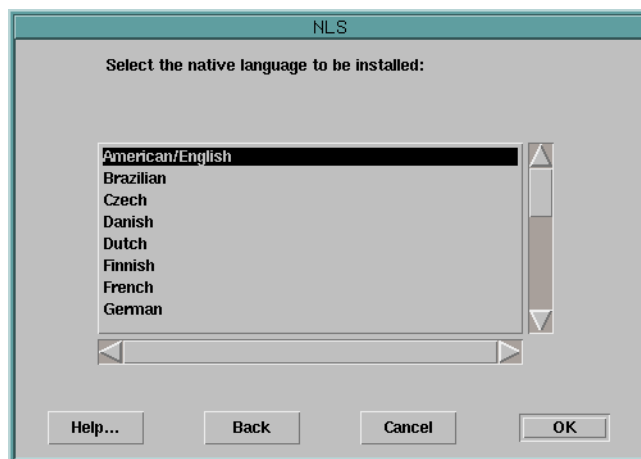
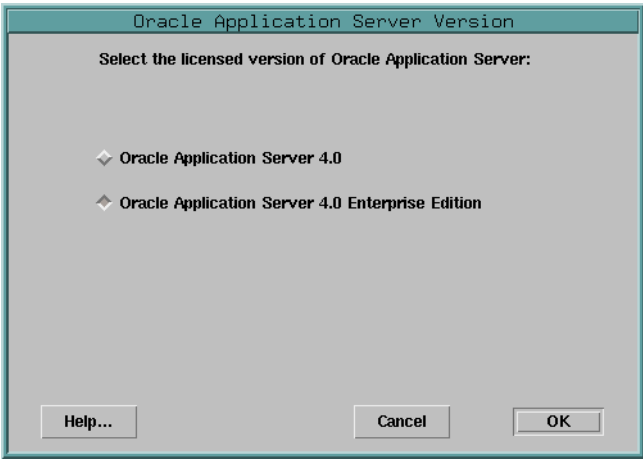The default is English.

10. Select Oracle Application Server in the Software Asset Manager and click Install.

Figure 2–6   Software Asset Manager

11. Select the version of Oracle Application Server for which you have a license.

Figure 2–7   Selecting your version of Oracle Application Server

> **Note:** The installation of Oracle Transaction Service (an Enterprise Edition feature) has a runtime dependency on Oracle8 Client.

Installation Procedures

At this point in the installation, you are prompted with a form that asks you if you are performing a Complete or Custom Installation. Based on your response, there are several installation options.

Use the following table to select which documentation section is suitable to you:

Installation Task	Description	Documentation Section
Complete	Installation with all cartridges.	"Standard Installations" on page 2-12
Custom Installation of a Single-node	The Web Request Broker (WRB), Web Listener, and selected cartridges are installed on the same machine.	"Standard Installations" on page 2-12
Custom Installation of the Primary node in a Multi-node setup	The primary node is where your WRB and configuration files are installed. Cartridges are also installed on this node for administration and configuration.	"Standard Installations" on page 2-12
Custom Installation of the Remote Node in a Multi-Node Setup	Allows you to specify which components of Oracle Application Server (Listener and/or Cartridges) you want for a remote node.	"Custom Installation of the Remote Node in a Multi-Node Setup" on page 2-21
Complete Reinstallation	Overrides all previously entered information.	"Standard Installations" on page 2-12
Partial Reinstallation	Allows you to go step-by-step through the reinstallation process.	"Reinstallation Options" on page 2-30
Removing Oracle Application Server	Also known as deinstallation and uninstallation.	"Removing Oracle Application Server" on page 2-44

> **Note:** For information about performance benefits from a multi-node site, see the *Performance and Tuning Guide*.

> **Note:** The Complete installation automatically installs the Wallet Manager Tool. For more information, see the *Security* guide.

Standard Installations

A standard installation includes all of the following:

- Complete Installation

- Custom Installation of a Single-node

- Custom Installation of the Primary node in a Multi-node setup

> **Note:** If you are performing a multi-node installation, you will need to repeat the installation procedure for each node. That is, you can only install one node with each pass through the Oracle Installer. Each pass must be run on the individual node.

- Complete Reinstallation

> **Note:** Before performing a Complete Reinstallation, you must stop all Oracle processes. For a list of Oracle processes that are running, enter the following:
>
> ```
> ps -auxww | grep ora
> ```

1. Select Oracle Application Server in the Software Asset Manager window and click Install (if you have not already done so).

2. Select Complete or Custom Installation.

Figure 2–8 Installation types
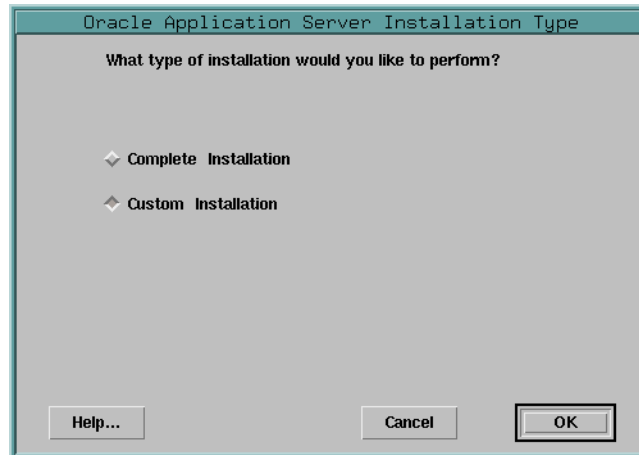
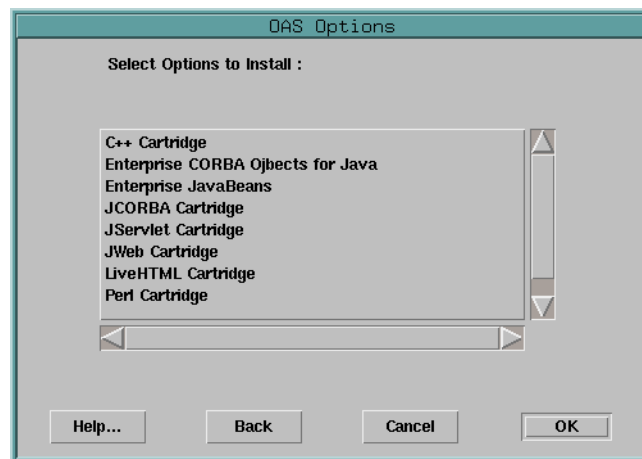- **COMPLETE,** skip to step 5.
- **CUSTOM**, continue.

3. Select Install a Single Node or Install a Primary Multi Node.

(You will only receive this screen if you selected a CUSTOM Installation.)

Figure 2–9   Selecting an installation activity
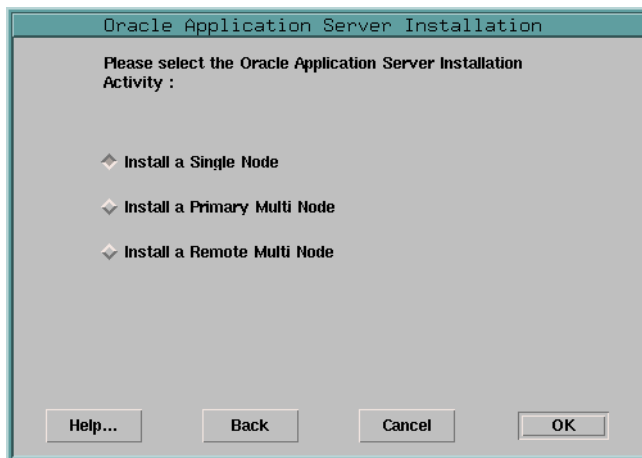
4. Select which options/cartridges you want to install on this node.
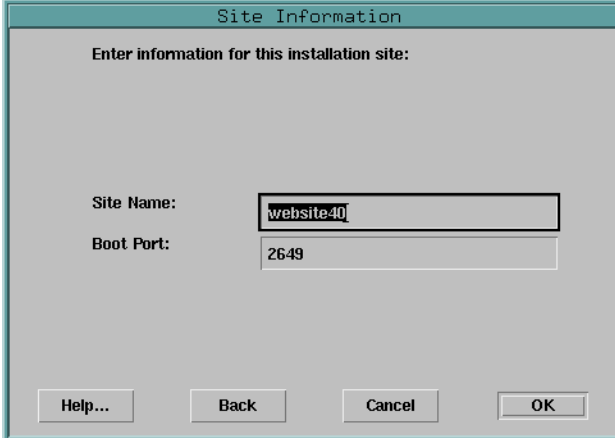
Figure 2–10   Options/cartridges

For a description of each cartridge, see the *Oracle Application Server Overview.*

5. Enter information about your site.

Figure 2–11   Site information

- **Site Name** - Defaults to "website40". Oracle Application Server allows you to have multiple server sites running in a single installation environment. Servers are differentiated by site names, so you must enter the current Web server by site name. If you are **migrating** from previous versions, you must use a different name than the one used for the previous version. The site name should be the same in all nodes which comprise a site.

- **Boot Port** - Defaults to 2649. Select a port that is not being used by another process.

  The Installer uses the boot port you specify and the next two consecutive ports. For example, if you select port 2649, be sure that ports 2650 and 2651 are also available.

6. Enter information about the Node Manager Listener.

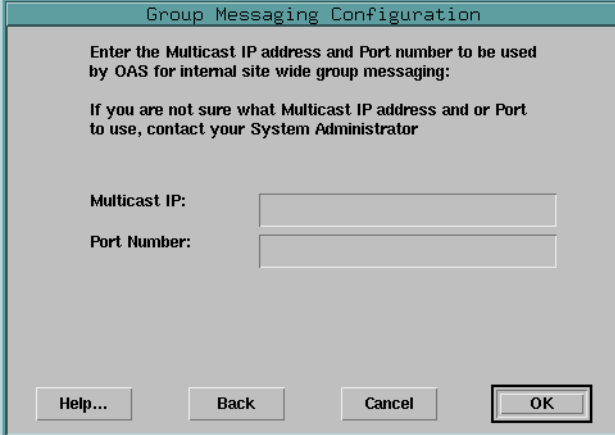*Figure 2–12   Node Manager Listener settings*

The Node Manager Listener is the Web-based tool used to administer all components of the Oracle Application Server (except for the Web Request Broker). It must be present on each node in a multi-node site. This listener cannot execute cartridges and is not configurable.

- **Port Number** - Enter a network port for the Node Manager Listener. The default port number is **8888**, but any available port may be used. The valid range is between 1 and 65535. Port numbers lower than 1024 are considered to be reserved. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version. Select a port that is not being used by another process.

- **User Name** - This is the name of the Oracle Application Server user who will perform administration tasks using the Oracle Application Server Manager. The default value is "admin", but any user name may be used.

- **User Password** - Enter a password for the admin user. You will be asked to enter your password twice for confirmation. There is no default value for this password. This password will also be used to authenticate for the Administration Utilities Listener and the Wallet Manager.

- **Confirm Password** - Enter the password again for confirmation.

7. Enter Group Messaging information. Enter the Multicast IP address and Port number to be used for internal site wide group messages. After entering a valid IP address and Port number, make note of the numbers. If you plan to setup remote nodes, you will need the information during the remote node installation. If you forget to record the IP Address and Port number, you can use the OASMCASTCFG utility to display the numbers. See the Administration Guide for more information.

Figure 2–13   Group Messaging screen

Oracle Application Server requires a designated IP address and port number for internal communication between components.

- **IP Address** - Enter an IP address not being used. The valid range is from 225.0.0.0 to 239.255.255.255.

- **Port Number** - Enter a port number not currently being used. By default, the following ports are used by Oracle Application Server:

Table 2–1   Ports used

Ports Used	Component
80 (default)	Web Listener
8888 (default)	Node Manager Listener
8889 (by default, Node Manager port + 1)	Admin Utility Listener
2649 (default)	Boot Port
2650, 2651 (by default, the Installer uses the Boot Port plus the next two ports)	Installer

8. Enter information about the Administration Utilities Listener.

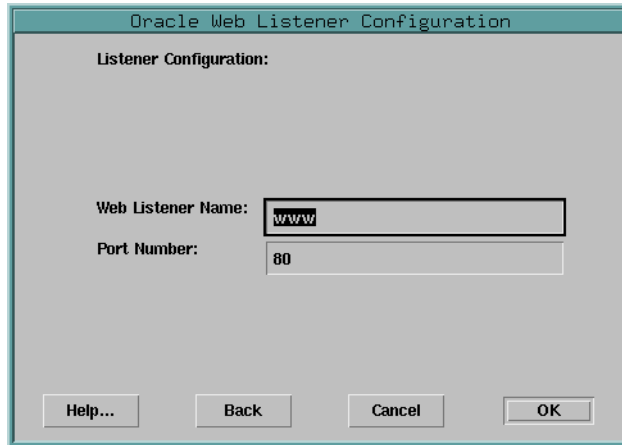*Figure 2–14   Administration Utility Listener information*
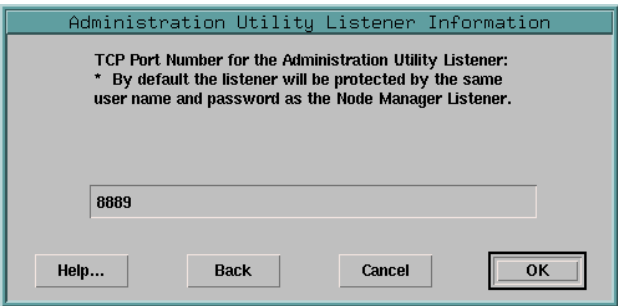
The Administration Utilities Listener interacts with the WRB and therefore is able to run administration utilities such as the Log Analyzer.

■ **Port Number** - Enter a network port for the Administration Listener. The default is 8889, but any available port may be used. The valid range is between 1 and 65535. Port numbers lower than 1024 are considered to be reserved. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version. Select a port that is not being used by another process.

9. Enter information about the Web Listener.

Figure 2–15   Web Listener Configuration screen

- **Web Listener Name** - During installation, a web listener is set up for general usage requests. The default Web Listener name is "www".

- **Port Number** - Enter the port number on which this listener should run (the default port is 80). Select a port that is not being used by another process. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

10. Choose which post-installation activities you want the Installer to perform.

Figure 2–16   Post-Installation Activities screen

Update .login and **.profile with new environment variables.**

If you select this option, the Oracle Application Server environment variables are automatically set by sourcing the **.login** and **.profile** files. When the installation is complete, log out and log in again, or execute your shell initialization files for the settings to take effect.

If you choose not to have the Installer update your **.login** and **.profile** files, but you do not want to have to source them each time you log in, you can run one of the following scripts to update your **.login** and **.profile** files.

(C-shell)

```
% $ORACLE_HOME/ows/4.0/install/owsenv_csh.sh
```

(Bourne/Korn shell)

```
% $ORACLE_HOME/ows/4.0/install/owsenv_bsh.sh
```

Connect to the Node Manager Listener with browser:

If you select this option, the following events will occur automatically once installation is complete:

■   Oracle Application Server automatically launches your browser

- You are prompted to enter the Node Manager Listener username and password (set during installation)

- Oracle Application Server automatically connects to the Node Manager Listener, and displays the Oracle Application Server Home Page.

11. Enter your browser name.

   (You will only be prompted with this screen if you chose to have Oracle Application Server connect automatically to the Node Manager Listener in the previous screen.)

Figure 2–17   Browser command
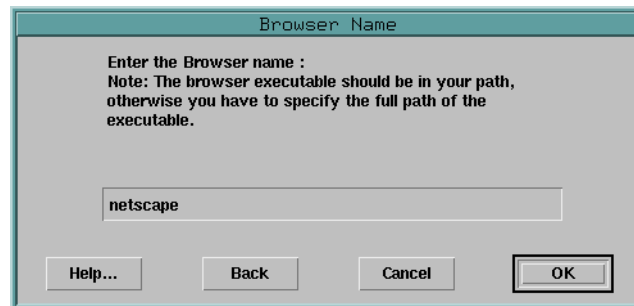
Here you can enter the command for launching your browser.

12. For example, if you are using Netscape, enter `netscape` in the Browser Name dialogue box. If the browser executable is not in your path, you must specify the full path of the executable.Reboot your machine.

YOU HAVE COMPLETED THE INSTALLATION! See Chapter 3, "Post-Installation Tasks" to configure Oracle Application Server.

Custom Installation of the Remote Node in a Multi-Node Setup

For a description of the performance benefits of a multiple node site, see the *Performance and Tuning Guide.*

You will need to repeat the installation procedure for each remote node. That is, you can only install one node with each pass through the Oracle Installer. Each pass must be run on the individual node.

Overview

In a remote multi-node installation, you are able to select which component(s) to install on the node:

- Oracle Web Listener
- Oracle Web Request Broker
- OAS Options (Cartridges)

For a description of these components, see the *Oracle Application Server Overview*.

> **Note:** The configuration files **site.app** and **wrb.app** and the application **.app** files can only be created and managed on a primary node.

By default, cartridges are configured to run on all WRB nodes. The limitation is that cartridges need to be installed on specified nodes, otherwise, an error occurs when you try to execute a cartridge that has not yet been installed.

The components installed in a single-node (stand-alone) setup are the same as those installed in a primary multi-node installation. The only difference is that you can customize the list of cartridges you wish to install on a primary multi-node installation.
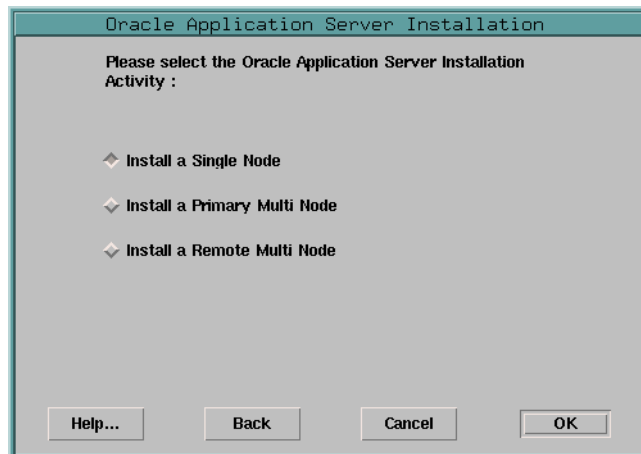
To install a remote node:

1. Select Custom Installation.

Figure 2–18 Installation types
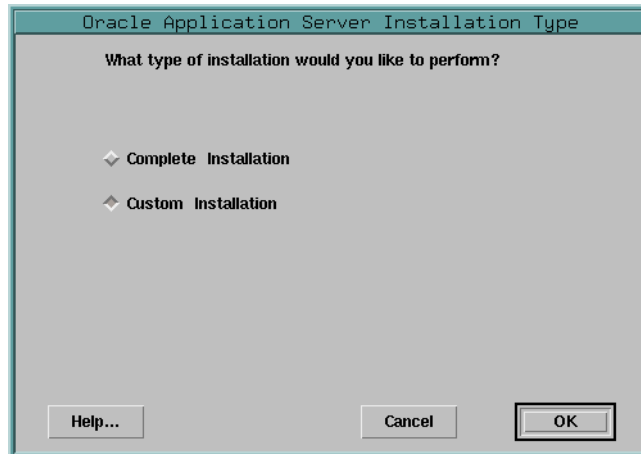
2. Select Install a Remote Multi Node.

Figure 2–19 Multi-node remote

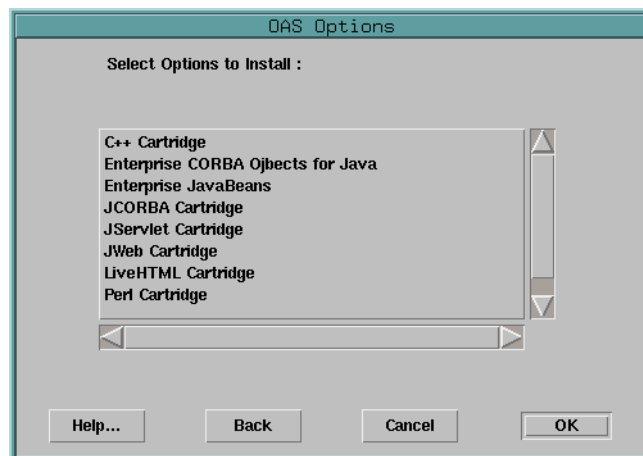**3.** Choose which components to install on this remote node.

Figure 2–20   Product components
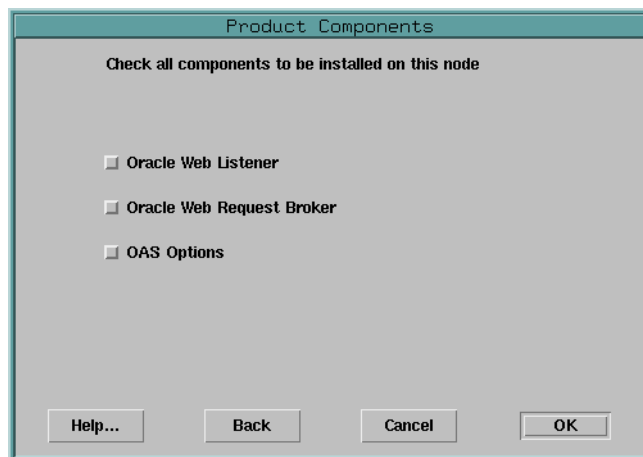
4. Select which options/cartridges you want installed on this node. For a description of each cartridge, see the *Oracle Application Server Overview.*
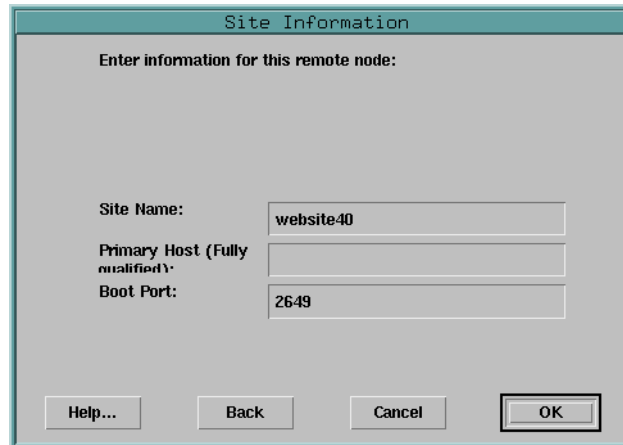
(You will only receive this form if you elected to install cartridges in the previous step.)

Figure 2–21   Optional cartridges
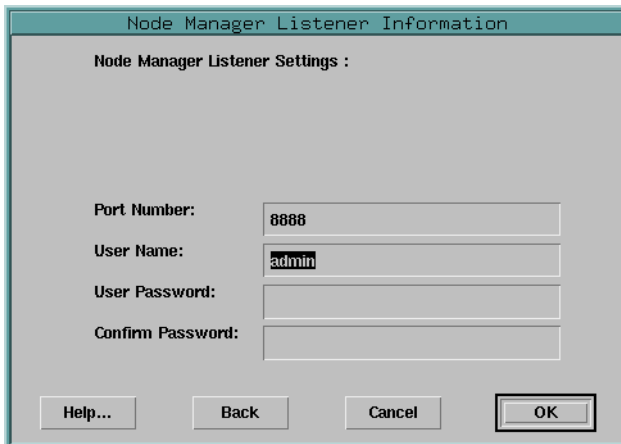
5. Enter information about your site.

Figure 2–22   Site information

- **Site Name** - Defaults to "website40". Oracle Application Server allows you to have multiple server sites running in a single installation environment. Servers are differentiated by site names, so you must enter the current Web server by site name. The site name should be the same in all nodes which comprise a site.

- **Primary Host (Fully-qualified)** - Enter the fully-qualified hostname of the primary node in this multi-node installation. ("Fully-qualified" is of the form *hostname.domain*.)

- **Boot Port** - Defaults to 2649. Select a port that is not being used by another process. The Installer uses the boot port you specify and the next two consecutive ports. For example, if you select port 2649, be sure that ports 2650 and 2651 are also available. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

6. Enter information about the Node Manager Listener.

Figure 2–23   Node Manager Listener settings

The Node Manager Listener is the Web-based tool used to administer all components of the Oracle Application Server (except for the Web Request Broker). It must be present on each node in a multi-node site. This listener cannot execute cartridges and is not configurable.

- **Port Number** - Enter a network port for the Node Manager Listener. The default port number is 8888, but any available port may be used. The valid range is between 1 and 65535. Port numbers lower than 1024 are considered to be reserved. Select a port that is not being used by another process, including another version of Oracle Application Server Release 4.0.8.1.

- **User Name** - This is the name of the Oracle Application Server user who will perform administration tasks using the Oracle Application Server Manager. The default value is "admin", but any user name may be used.

- **User Password** - Enter a password for the admin user. You will be asked to enter your password twice for confirmation. There is no default value for this password. This password will also be used to authenticate for the Administration Utilities Listener.

- **Confirm Password** - Enter the password again for confirmation.

7. Enter information about the Oracle Web Listener.

   (You will only receive this form if you elected to install the Oracle Web Listener in step 3.)

Figure 2–24   Web Listener configuration

- **Web Listener Name** - During installation, a web listener is set up for general usage requests. The default Web Listener name is "www".

- **Port Number** - Enter the port number on which this listener should run (for the Oracle Web Listener, the default port is 80). Select a port that is not being used by another process. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

8. Enter Group Messaging information. Enter the Mulicast IP address and Port number to be used for internal site wide group messages. After entering a valid IP address and Port number, make note of the numbers. If you plan to setup remote nodes, you will need the information during the remote node installation. If you forget to record the IP Address and Port number, you can use the

OASMCASTCFG utility to display the numbers. See the Administration Guide for more information.

Figure 2–25   Group Messaging screen

Oracle Application Server requires a designated IP address and port number for internal communication between components.

- **IP Address** - Enter an IP address not being used. The valid range is from 225.0.0.0 to 239.255.255.255.

- **Port Number** - Enter a port number not currently being used. By default, the following ports are used by Oracle Application Server:

Table 2–2   Ports used

Ports Used	Component
80 (default)	Web Listener
8888 (default)	Node Manager Listener
8889 (by default, Node Manager port + 1)	Admin Utility Listener
2649 (default)	Boot Port
2650, 2651 (by default, the Installer uses the Boot Port plus the next two ports)	Installer

9. Choose which post-installation activities you want the Installer to perform.

Figure 2–26 Post-Installation Activities screen
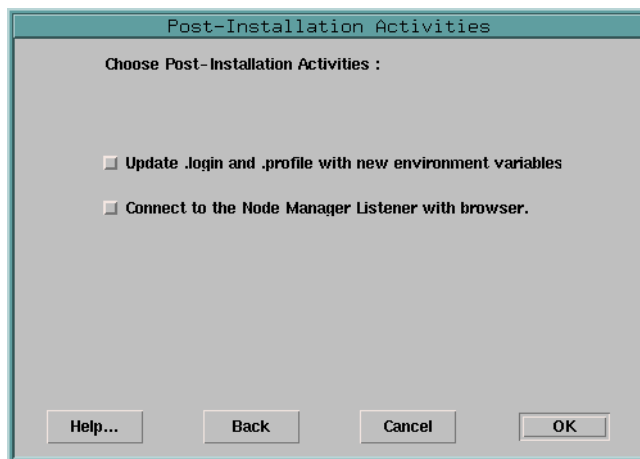
Update .login and **.profile with new environment variables.**

If you select this option, the Oracle Application Server environment variables are automatically set by sourcing the **.login** and **.profile** files. When the installation is complete, log out and log in again, or execute your shell initialization files for the settings to take effect.

If you choose not to have the Installer update your **.login** and **.profile** files, but you do not want to source them each time you log in, you can run one of the following scripts to automatically source your **.login** and **.profile** files.

(C-shell)

```
% $ORACLE_HOME/ows/Release 4.0.8.1/install/owsenv_csh.sh
```

(Bourne/Korn shell)

```
% $ORACLE_HOME/ows/Release 4.0.8.1/install/owsenv_bsh.sh
```

Connect to the Node Manager Listener with browser:

If you select this option, the following events will occur automatically once installation is complete:

- Oracle Application Server automatically launches your browser

- You are prompted to enter the Node Manager Listener username and pass-word (set during installation)

- Oracle Application Server automatically connects to the Node Manager Lis-tener, and displays the Oracle Application Server Home Page.

10. Enter your browser name.

(You will only be prompted with this screen if you chose to have Oracle Appli-cation Server connect automatically to the Node Manager Listener in the previ-ous screen.)

Figure 2–27   Browser command
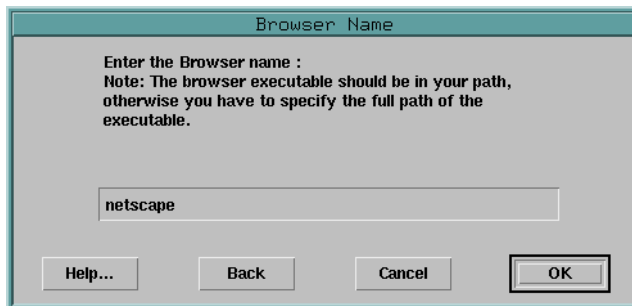
Here you can enter the command for launching your browser.

For example, if you are using Netscape, enter `netscape` in the Browser Name dialogue box. If the browser executable is not in your path, you must specify the full path of the executable.

YOU HAVE COMPLETED THE INSTALLATION! See Chapter 3, "Post-Installation Tasks" to configure Oracle Application Server.

Reinstallation Options

> **Note:**   If you are attempting to reinstall Oracle Application Server, and you are getting the error, "Cannot create directory" although the directory already exists, try exiting the shell and logging out. This could be due to a problem with the xterm/command shell.

Once the product is installed, you may perform the following reinstallation tasks:

- Custom > **Add Components** - This option, which is only available if a previous version of Oracle Application Server 4.x is detected, allows you to add components to the current site. For more information, see the section "Add Components" on page 2-34.

Retain Current Settings Option

1. Select Oracle Application Server in the Software Asset Manager window and click Install.

2. Select the version of Oracle Application Server for which you have a license.

Figure 2–28   Selecting your version of Oracle Application Server
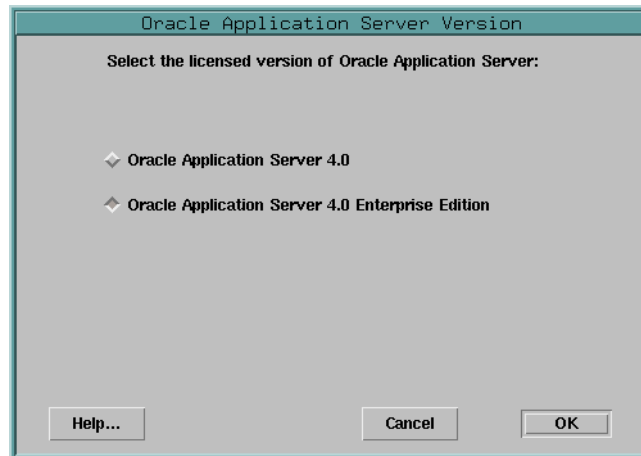
3. Select (Yes) to re-install Oracle Application Server software.

4. Select Complete or Custom Installation.

Figure 2–29   Installation types
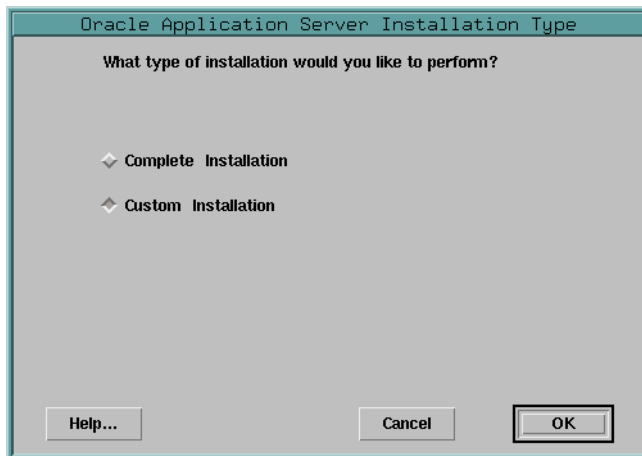
5. Select Retain current settings.

(This form will appear only if a previous installation of Oracle Application Server 4.x is detected.)

Figure 2–30   Reinstall Options
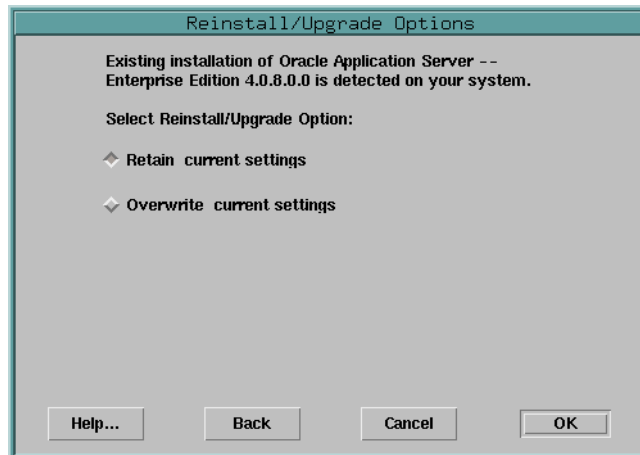
6. The Installer prompts you to enter the SITE name. The site name should be the same in all nodes which comprise a site.

Figure 2–31   SITE name
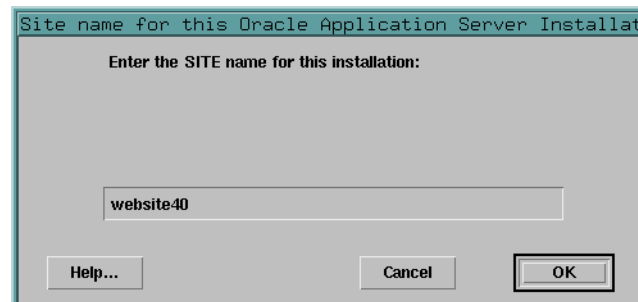
7. The Installer will prompt you to confirm the reinstallation of any products already installed.

YOU HAVE COMPLETED THE REINSTALLATION! See Chapter 3, "Post-Installation Tasks" to configure Oracle Application Server.

Add Components

1. Select Oracle Application Server in the Software Asset Manager window and click Install.

2. Select Yes to reinstall Oracle Application Server.

3. Select Custom Installation.

Figure 2–32   Installation type
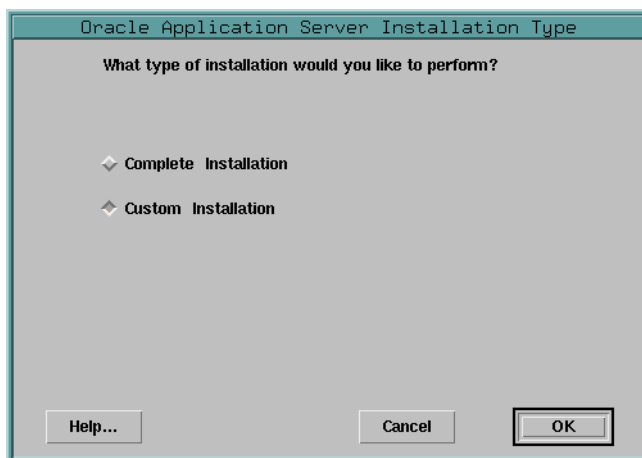
4. Select Add Components.

Figure 2–33   Add Components
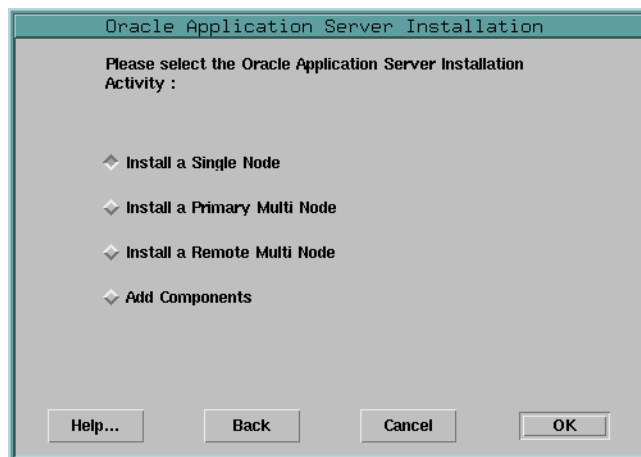
5. Select which components you want to install on this node.

Figure 2–34   Product components
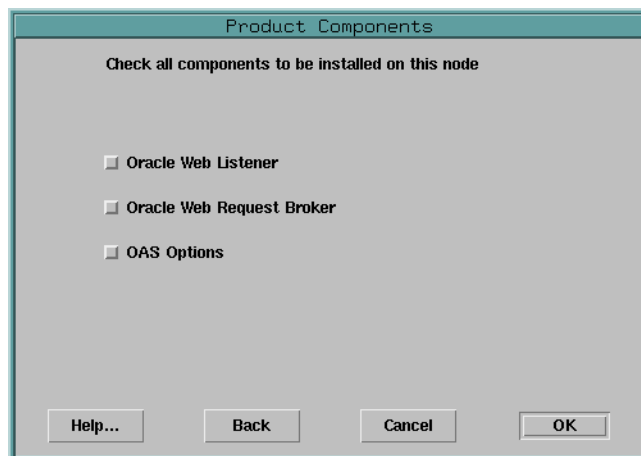
6. Select which cartridges/options you want to install.

(You will only receive this form if you elected to install Oracle Application Server Options in the previous step.)
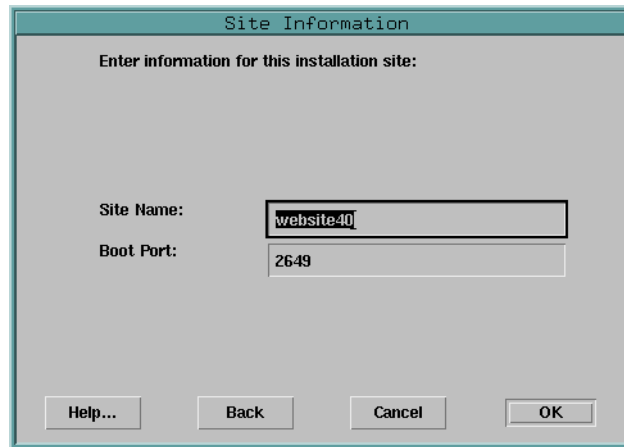
Figure 2–35 Options/cartridges
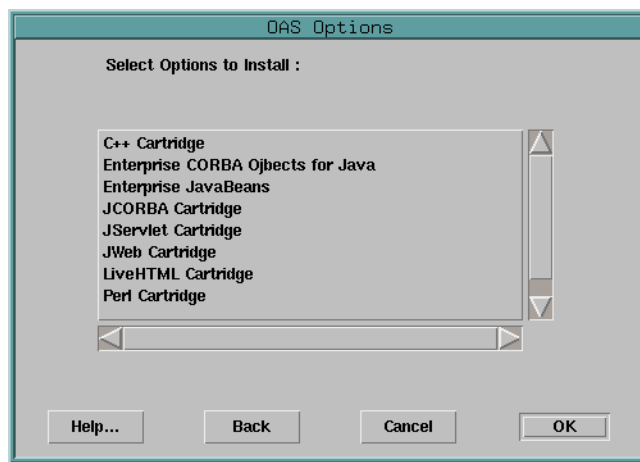
Select which options/cartridges you want to install on this node. For a description of each cartridge, see the *Oracle Application Server Overview.*

7. Enter information about your site.

Figure 2–36   Site information

- **Site Name** - Defaults to "website40". Oracle Application Server allows you to have multiple server sites running in a single installation environment. Servers are differentiated by site names, so you must enter the current Web server by site name. The site name should be the same in all nodes which comprise a site.

- **Boot Port** - Defaults to 2649. Select a port that is not being used by another process. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

  The Installer uses the boot port you specify and the next two consecutive ports. For example, if you select port 2649, be sure that ports 2650 and 2651 are also available.

8. Enter information about the Node Manager Listener.

Figure 2–37   Node Manager Listener settings

The Node Manager Listener is the Web-based tool used to administer all components of the Oracle Application Server (except for the Web Request Broker). It must be present on each node in a multi-node site. This listener cannot execute cartridges and is not configurable.

- **Port Number** - Enter a network port for the Node Manager Listener. The default port number is **8888**, but any available port may be used. The valid range is between 1 and 65535. Port numbers lower than 1024 are considered to be reserved. Select a port that is not being used by another process. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

- **User Name** - This is the name of the Oracle Application Server user who will perform administration tasks using the Oracle Application Server Manager. The default value is "admin", but any user name may be used.

- **User Password** - Enter a password for the admin user. You will be asked to enter your password twice for confirmation. There is no default value for this password. This password will also be used to authenticate for the Administration Utilities Listener.

- **Confirm Password** - Enter the password again for confirmation.

9. Enter Group Messaging information. Enter the Mulicast IP address and Port number to be used for internal site wide group messages. After entering a valid IP address and Port number, make note of the numbers. If you plan to setup remote nodes, you will need the information during the remote node installation. If you forget to record the IP Address and Port number, you can use the OASMCASTCFG utility to display the numbers. See the Administration Guide for more information.

Figure 2–38   Group Messaging screen

Oracle Application Server requires a designated IP address and port number for internal communication between components.

- **IP Address** - Enter an IP address not being used. The valid range is from 225.0.0.0 to 239.255.255.255.

- **Port Number** - Enter a port number not currently being used. By default, the following ports are used by Oracle Application Server:

Table 2–3   Ports used

Ports Used	Component
80 (default)	Web Listener
8888 (default)	Node Manager Listener
8889 (by default, Node Manager port + 1)	Admin Utility Listener
2649 (default)	Boot Port
2650, 2651 (by default, the Installer uses the Boot Port plus the next two ports)	Installer

10. Enter the port number for the Administration Utility listener. Select a port that is not being used by another process. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

Figure 2–39   Administration Utility Listener
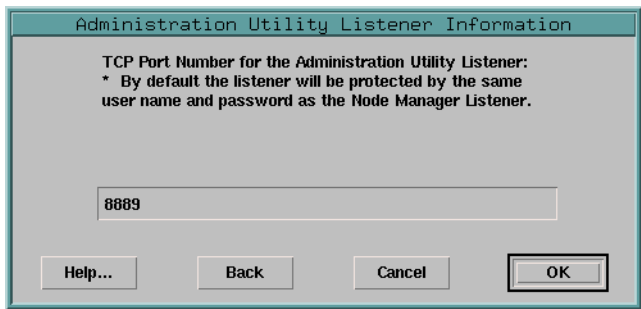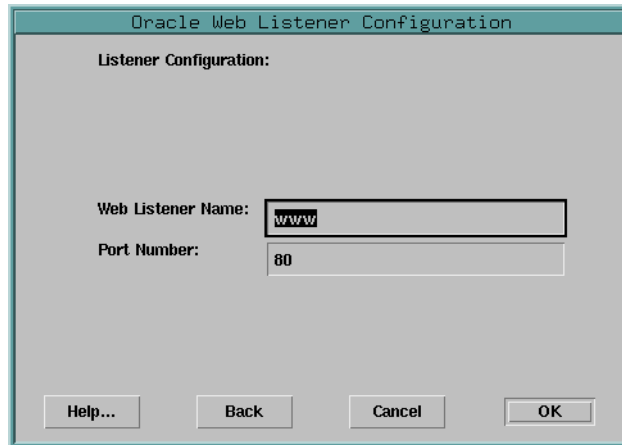
The default value is 8889. The Administration Utility Listener is protected by the same user name and password as the Node Manager Listener.

11. Enter information about the Oracle Web Listener.

(You will only receive this form if you elected to install the Oracle Web Listener in step 3.)

Figure 2–40   Web Listener configuration

- **Web Listener Name** - During installation, a web listener is set up for general usage requests. The default Web Listener name is "www".

- **Port Number** - Enter the port number on which this listener should run (for the Oracle Web Listener, the default port is 80). Select a port that is not being used by another process. If you are migrating from previous versions or installing more than one version of Oracle Application Server on one machine, you **must** select a different port than the one used for the previous version.

12. Choose which post-installation activities you want the Installer to perform.

Figure 2–41   Post-Installation Activities screen

Update .login and **.profile with new environment variables.**

If you select this option, the Oracle Application Server environment variables are automatically set by sourcing the **.login** and **.profile** files. When the installation is complete, log out and log in again, or execute your shell initialization files for the settings to take effect.

If you choose not to have the Installer update your **.login** and **.profile** files, but you do not want to have to source them each time you log in, you can run one of the following scripts to update your **.login** and **.profile** files.

(C-shell)

```
% $ORACLE_HOME/ows/Release 4.0.8.1/install/owsenv_csh.sh
```

(Bourne/Korn shell)

```
% $ORACLE_HOME/ows/Release 4.0.8.1/install/owsenv_bsh.sh
```

Connect to the Node Manager Listener with browser:

If you select this option, the following events will occur automatically once installation is complete:

■ Oracle Application Server automatically launches your browser

- You are prompted to enter the Node Manager Listener username and password (set during installation)

- Oracle Application Server automatically connects to the Node Manager Listener, and displays the Oracle Application Server Home Page.

13. Enter your browser name.

(You will only be prompted with this screen if you chose to have Oracle Application Server connect automatically to the Node Manager Listener in the previous screen.)

Figure 2–42   Browser command
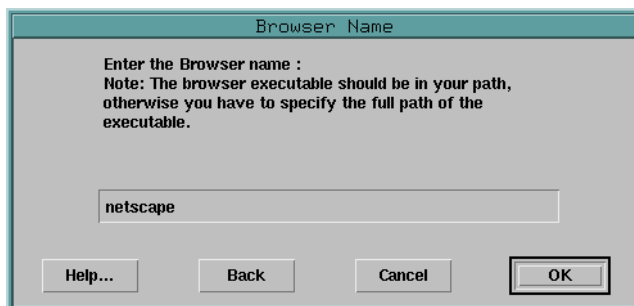
Here you can enter the command for launching your browser.

For example, if you are using Netscape, enter `netscape` in the Browser Name dialogue box. If the browser executable is not in your path, you must specify the full path of the executable.

YOU HAVE COMPLETED THE INSTALLATION! See Chapter 3, "Post-Installation Tasks" to configure Oracle Application Server.

Automatic Startup

To create a script to automatically start up the Web Request Broker and the Node Manager Listener when a machine is rebooted, create a file in the **/etc/rc3.d** directory with the following contents:

```
#!/bin/sh
owsctl start -nodemgr &
owsctl start &
```

The file name should be of the form *Snnfilename* where 'S' means start the process and 'nn' is the relative sequence number for starting the job. For example, **S15wrb** might be the name of the Web Request Broker startup file, if it is the fifteenth job to be started after a machine reboot.

Removing Oracle Application Server

> **Note:** To remove Oracle Application Server, you must use the Oracle Installer on the CD that was used to install Oracle Application Server.

To remove Oracle Application Server, use the following steps:

1. Ensure that all Oracle Services are stopped.

    a. From the Welcome page, select OAS Manager.

    b. Click on the Site.

    c. In the right column, select All and then click on the stop icon.

    (You can alternatively use the command "owsctl stop".)

2. Stop the Node Manager using the command:

    ```
    owsctl stop -nodemgr
    ```

3. Make sure that all Oracle Application Server processes have been stopped.

    Enter the command (depending on which ps utility you use):

    ```
    ps -auxww | grep ora
    ```

4. Start the Oracle Installer (the same one used to install Oracle Application Server 4.0.8).

5. Select Oracle Application Server 4.0.8 in the right column and click Remove.

Figure 2–43   Software Asset Manager
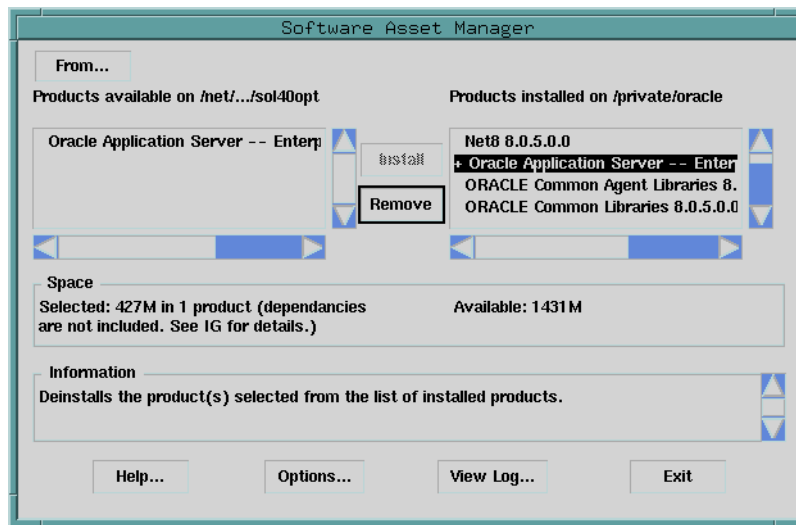
6. Confirm the name of the site to be removed.

7. The Installer will prompt you for responses during the deinstallation.

8. (Netscape Servers only) Restore the old configuration to the **obj.conf** file:

   ■ For Netscape Enterprise Server, in the **%Netscape Server Home%\https**-*wrb_configured_server_name***config** directory, move the **obj.conf** file and restore the old configuration from **obj.conf.sav**.

   ■ For Netscape FastTrack Server, in the **%Netscape Server Home%\httpd**-*wrb_configured_server_name***config** directory, move the **obj.conf** file and restore the old configuration from **obj.conf.sav**.

3

Post-Installation Tasks

This chapter briefly explains how to start Oracle Application Server and how to connect to the Node Manager and Administration Utilities listeners. For complete instructions about configuring Oracle Application Server, see the *Oracle Application Server Administration Guide.*

Contents

- Post-Installation Tasks
- Starting Oracle Application Server using the OAS Manager
- Using Separate ORACLE_HOMEs
- Command-Line Utilities

Post-Installation Tasks

You may receive further prompts if the Installer has to install any other Oracle products required by Oracle Application Server. The Installer notifies you when installation is complete and prompts you to proceed to the post-installation steps.

Before using Oracle Application Server, you must perform several post-installation tasks.

1. Source your shell initialization files.

    If you chose to have your **.login** and **.profile** initialization files automatically updated during installation, you must now execute your shell initialization files for the new settings to take effect. For example:

    (C-shell)

    ```
    % source ~/.login
    ```

(Bourne/Korn shell)

```
# . $HOME/.profile
```

If during installation you chose not to have the Installer update your **.login** and **.profile** files, but you do not want to have to source them each time you log in, you can run one of the following scripts to update your **.login** and **.profile** files.

(C-shell)

```
% $ORACLE_HOME/ows/4.0/install/owsenv_csh.sh
```

(Bourne/Korn shell)

```
% $ORACLE_HOME/ows/4.0/install/owsenv_bsh.sh
```

2. Run the **oasroot.sh** script.

Run the **oasroot.sh** utility (as root) so that you can start and stop listeners with port numbers less than 1024. Running the **oasroot.sh** utility also gives you the ability to start and stop listeners owned by other users. To run the script:

a. Go to the **$ORACLE_HOME/orainst** directory.

```
# cd $ORACLE_HOME/orainst
```

b. Log in as root.

```
su root
```

c. Run the **oasroot.sh** script.

```
# ./oasroot.sh
```

The script will prompt you:

- for the ORACLE_OWNER, ORACLE_HOME and ORACLE_SID environment variables. You can accept the defaults.

- for the local **bin** directory. You can accept the default.

- to acknowledge that the ORACLE_HOME directory is not the same as the home directory of the user installing Oracle Application Server.

- to "raise the ORACLE owner's ulimit as per the IUG." You can ignore this message.

   d. Exit from root user.

3. Add a remote node to a web site.

If you installed a remote node as part of a multi-node installation, you must add the remote node to your Oracle Application Server website. For information about adding a remote node, see the *Oracle Application Server Administration Guide.*

If you installed a remote node as part of a multi-node installation, you must add the remote node to your Oracle Application Server website. For information about adding a remote node, see the *Oracle Application Server Administration Guide.*

Starting Oracle Application Server using the OAS Manager

1. Connect to the Welcome page.

   a. Use your Web browser to connect to:

   http://*hostname.domain:port_number*

   where *port_number* refers to the port number you specified for the Node Manager during installation.

   For example:

   http://paris.worldcup:8888

Note: If you use Internet Explorer 4.01 to connect to the OAS Manager through a proxy server and receive the error message, "The request did not specify a valid virtual host," turn off the "Use HTTP 1.1 through proxy connections" switch. This can be located by opening View > Internet Options > Advanced, and scrolling down to the HTTP 1.1 Settings section.

---

b. Enter the Node Manager username and password recorded during installation. The Welcome page appears:

Figure 3–1   Welcome page

2. Bring up the OAS Manager page.

Once connected to the Welcome page, click on the OAS Manager icon. This brings up a Web page with two columns. On the left is the name of your Web site ("website40" by default) and on the right is a table showing the status of the Web site.

3. Select All and click the green "Start" button ▶.

Figure 3–2   Web Site page
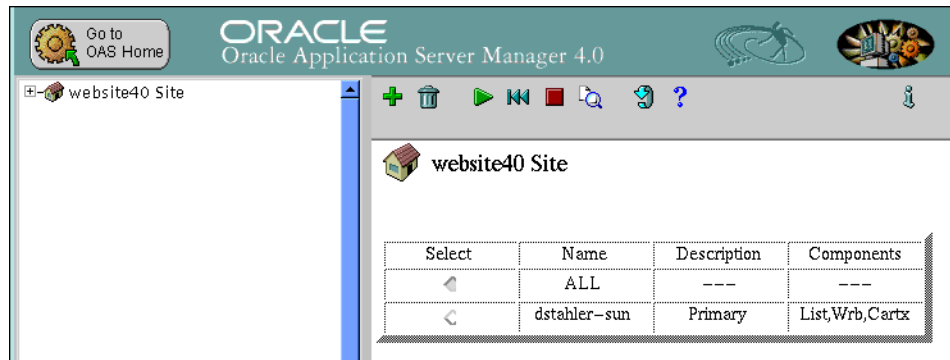
This action automatically starts the following components:

- the Oracle Request Broker (ORB)
- all Web Request Broker (WRB) processes
- all configured listeners

An HTML page appears with messages about the processes being started. If all processes are correctly started, you can click OK at the bottom of the page.

4. Verify that the components have started.

Expand the navigation tree in the left column by clicking the "+" next to the name of your Web site (the default is "website40"). This shows the three principal components of Oracle Application Server:

- Oracle Application Server
- HTTP Listeners
- Applications

Clicking on any of these components reveals a status table about the component and its associated processes. For example, click on Oracle Application Server to verify if all of the processes have started. This form has information about each process, including a Status field that indicates whether or not the process is up (with a green flag) or down (with a red flag).

> **Note:** When you start an application you will only see red flags. This is normal and happens because the processes have not had a request yet.

Figure 3–3   OAS Status form
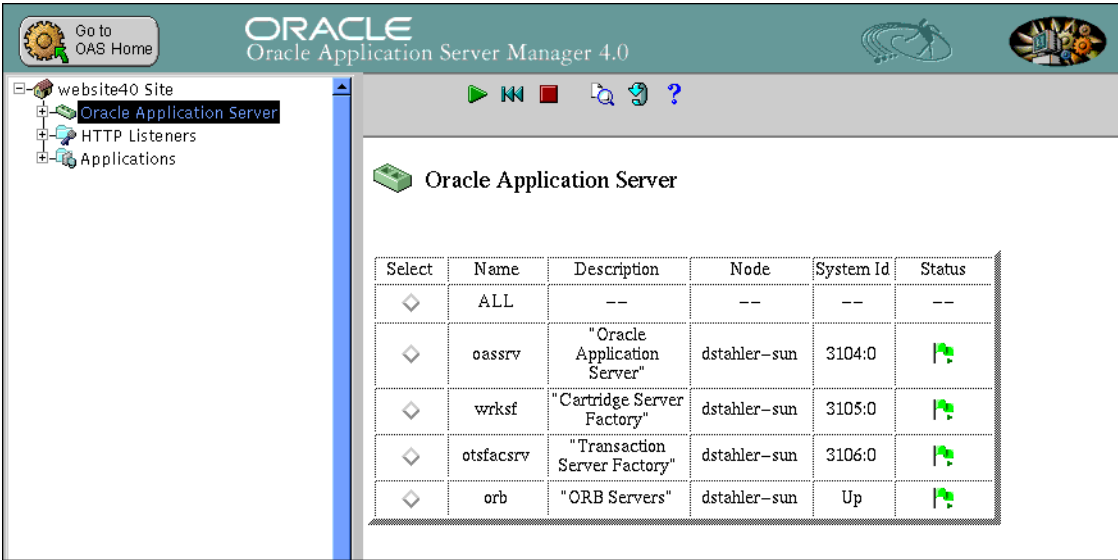
The same process works for the remaining two components.

Connect to the OAS Utilities Page

All of the utilities included with Oracle Application Server can be accessed from the OAS Utilities page. Use the OAS Utilities page for such tasks as configuring the Logger or registering an external listener. The OAS Utilities page is located at *host-name.domain:*8889 by default. You can enter its URL in your Web browser, or:

1. Click the [Go to OAS Home] icon at the top of the page.

2. Click the OAS Utilities icon .

3. Expand the navigation tree by clicking the "+" next to Utilities. This displays the Oracle Application Server utilities.

Figure 3–4   OAS Utilities
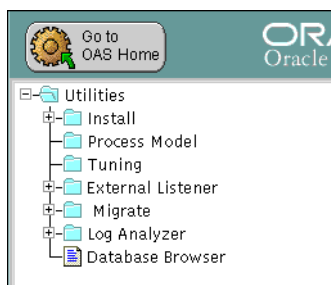
Use the Help pages or the *Oracle Application Server Administration Guide* for further information.

> **Note:** If you are **migrating**, see Chapter 4, "Migrating From Previous Versions".

Using Separate ORACLE_HOMEs

Oracle Application Server 4.0.8 cannot be installed in the same ORACLE_HOME as **any** other Oracle products including RDBMS and earlier versions of Oracle Application Server. Hence, during the installation, you need to specify a new ORACLE_HOME. If you will be running Oracle Application Server and a database you must install the Oracle Application Server and the database under different ORACLE_HOMEs:

Command-Line Utilities

Oracle Application Server provides several command-line utilities that perform the same functions as the OAS Manager performs from your browser. This section contains a brief summary of the available utilities. For a complete discussion of the command-line utilities, see the *Administration Guide*.

> **Note:** Do not combine these tools to start and stop your website. For example, if you started the website using the OAS Manager (by selecting the name of the site and clicking the ▶ icon), you should not stop it using a command-line utility (owsctl stop). Use the same tool to start and stop Oracle Application Server components.

The **owsctl** utility is used to stop, start, and monitor the status of the Web Request Broker (WRB), Object Request Broker (ORB), and listeners.

You must have the following environment variables set:

- **ORAWEB_HOME** - This is the absolute path where Oracle Application Server is installed, and should be **$ORACLE_HOME/ows/4.0**.

- **ORAWEB_SITE** - This is the site name for Oracle Application Server.

- **ORACLE_HOME** - This is the absolute path where you install Oracle products. You must designate separate ORACLE_HOMEs for every installed product. For a summary of **owsctl** syntax, type:

```
owsctl -h
```

Examples

The following are some simple examples of the **owsctl** utility:

The command:

```
owsctl start
```

will start the WRB, the ORB, and the listeners.

To start the Node Manager, enter the command:

```
owsctl start -nodemgr
```

To shutdown your website, enter:

```
owsctl stop
```

To shutdown the Node Manager, enter:

```
owsctl stop -nodemgr
```

Security

Many of the commands available with Oracle Application Server, whether discussed in the documentation or not, can be used to change important settings. For example, anyone with access to the files on the machine where Oracle Application Server is installed can change passwords for the site. For this reason, you should use operating system protections to protect your site.

For more information, see "Restricting Access to the oaspasswd Utility" in Appendix A of the *Administration Guide.*

4

Migrating From Previous Versions

This chapter describes migrating from previous versions to Oracle Application Server. The migration is performed using a utility that copies configuration information about Oracle Application Server components, such as listeners and applications, from a previous installation of Oracle Application Server 4.0.7.x or 4.0.8 to a newly installed Oracle Application Server Release 4.0.8.1.

In This Chapter

Before you Migrate

The intent of the migration utility is to migrate a previous version of Oracle Application Server 4.0.7.x or 4.0.8.x to a newly installed version of Oracle Application Server Release 4.0.8.x. You should not migrate to a version of Oracle Application Server Release 4.0.8.x which you have already configured. The migration utility may overwrite Release 4.0.8.x configuration information with the configuration information of the previous version. If you want to migrate from a version earlier than 4.0.7.x, you must first migrate to version 4.0.7 and then migrate from 4.0.7 to version 4.0.8.x. The following sections illustrate some points to consider before migrating.

DADs

If you have a DAD configured in your Oracle Application Server 4.0.7.x or 4.0.8.x named "Bob", and a DAD also named "Bob" in Oracle Application Server Release

4.0.8.x, the migration utility will not migrate the 4.0.7.x or 4.0.8.x "Bob" DAD. In this example, to migrate Bob, the 4.0.7.x or 4.0.8.x DAD, you could rename it "Bob30" before migration.

Virtual Paths

The migration utility does not check to see if there are virtual path collisions between the previous version and Oracle Application Server Release 4.0.8.x. Before you migrate, check to see that each Release 4.0.8.x virtual path is not also used in the previous version.

Permissions

Before migrating from a previous version of Oracle Application Server, make sure that the migration utility (which runs under the Release 4.0.8.x user) has permission to access the configuration files of the previous version. Otherwise the migration utility will display an error message saying that the configuration files are not accessible.

Not Migrated

The following are not migrated from previous versions:

- sample applications
- third-party listeners
- transactions

    (You must add these manually after the migration. See the *Administration Guide* for more information.)

- MIN/MAX cartridge parameters

    (You must manually reset any MIN/MAX parameters after migration.)

- VRML cartridges

    (VRML cartridges are not supported in Release 4.0.8.1.)

SSL Certificates

If you are upgrading from a version of Oracle Application Server prior to 4.0.8, you **must** upgrade your old private key. See the SSL chapter in the *Security Guide* for instructions.

Migrating from Oracle Application Server 4.0.x

The migration utility allows migration from the following Oracle Application Server versions:

- 4.0.7

- 4.0.7.1

- 4.0.8

If you want to migrate from a version earlier than 4.0.7.x, you must first migrate to version 4.0.7 using the OAS 4.0.7 utility and then use the OAS 4.0.8 utility to migrate from 4.0.7 to version 4.0.8.

Duplicate Application File Names

During the migration, the utility will not overwrite any configuration information if there are duplicate names. If a 4.0.x application or cartridge also exists in Release 4.0.8.1, the migrate utility will not migrate it. To allow the migration utility to over-write Release 4.0.8.1 applications, remove or rename them and then perform the migration.

Steps for Migrating the Primary Node

> **Note:**   When migrating, you must use the same primary node as the one use in the previous version.

1. Install Oracle Application Server Release 4.0.8.x.

2. Connect to the migration utility by clicking OAS Utilities from the Welcome page on the primary node. Expand the tree under Utilities, and then click on Migrate.

3. Expand the tree structure under the appropriate version 4.0.7.x or 4.0.8.x.

4. Select Primary Node.

5. Enter the location (ORACLE_HOME) of the Oracle Application Server version to be migrated.

    The following components are migrated automatically:

    - WRB

    - listeners (local)

- cartridges/applications

In addition to the above components, all default processes are preserved, but any Oracle Application Server processes that you may have added manually (for example, another logger process such as **wrblog**) are not migrated.

6. You must create two new environment variables, ORACLE_HOME<version_number> and ORAWEB_HOME<version_number> and set them to point to the previous version.

These variables can be stored in your shell initialization file, **.cshrc, .profile,** or **.login.**

Steps for Migrating Remote Node Listeners

1. Once the primary node migration process is completed, expand the Utilities tree, click on Migrate, select 4.0.x, and select Remote Node(s)

2. Make sure the Node Manager is UP and running on all nodes that have listeners to be migrated.

3. The migrate utility prompts you with a list of candidate remote nodes which have configured listeners running on them. You only have to migrate those remote nodes that have configured listeners.

4. Select the remote node to be migrated and enter the ORACLE_HOME.

Undoing the Migration

All configuration files that are modified are backed up. The configuration files that are modified are: **wrb.app** and **site.app** in the primary node and the **owl.cfg** file in each node in the site that have listeners configured in them.

During migration, these files are modified and backed up as:

- **wrb.app** > **mig_wrb.bak**
- **site.app** > **mig_site.bak**
- **owl.cfg** > **mig_owl.bak**

If a fatal error occurs during migration of the configuration information in these files, they are automatically rolled back into the pre-migration state. This roll back does not happen if the migration encounters non-fatal errors such as "Duplicate application name" or "Duplicate listener name".

If you want to undo the effects of a migration, the above backup files can be manually rolled back. You may want to do this in case of an abnormal termination of the migration or you are not satisfied with the migration.

What Really Happens During the Migration?

Migrating the WRB

During a migration, the migrate utility:

- copies all the existing authentication configuration information from the 4.0.x **wrb.app** file to the Release 4.0.8.x **wrb.app** file

- copies all DADs from Oracle Application Server 4.0.x to Release 4.0.8.x

Migrating Listeners

For each listener, the migrate utility:

- creates listener directories and updates the **owl.cfg** file with listener information

- changes ownership of the listener directory

- copies the listener configuration files from Oracle Application Server 4.0.x to Oracle Application Server Release 4.0.8.x

- modifies the configuration files to update the directory paths for [Multiport] section, ServerPID, AdminFile, and Adapter file fields

Migrating Applications

The migrate utility identifies all applications deployed in Oracle Application Server 4.0.x and the selected Website.

For each application, the migrate utility:

(non-JCO application)

- extracts the application parameters from the **wrb.app** file and builds a new parameter file

- stores this new file $**ORAWEB_HOME/install**

- registers the new file with Oracle Application Server Release 4.0.8.x

- for each cartridge registered with the application:

  - extracts the cartridge parameters from Oracle Application Server 4.0.x and constructs a new cartridge configuration file

- registers the new cartridge configuration file with Oracle Application Server Release 4.0.8.x

- stores the new file in $**ORAWEB_HOME/install**

(JCO application)

- extracts the **.jar** file location of the application from the **wrb.app** file

- passes the **.jar** file to the JCO application deployment utility and regenerates a new file

- registers the new file with Oracle Application Server Release 4.0.8.x

A

Integration with Enterprise Manager

Contents

Introduction

This chapter provides instructions for establishing a connection between Oracle Application Server and the Enterprise Manager (EM), Oracle's enterprise-wide system management tool included with Oracle**8**. For further information about using and configuring Oracle Application Server with the EM, see the *Oracle Enterprise Manager Administrator's Guide* or the *Oracle Enterprise Manager Configuration Guide.*

Overview of the Enterprise Manager

The Enterprise Manager manages distributed Oracle systems using three main components:

Component	Function
Console	The Console gives you a central point of control for the Oracle environment through an intuitive graphical user interface (GUI) that provides powerful and robust system management.
Oracle Management Server	The Oracle Management Server provides distributed control between clients (database) and managed nodes (Oracle Application Server). As a central engine for notification, it processes all system management tasks and administers the distribution of these tasks across the enterprise.
Agent	The Agent is a process that runs on managed nodes (Oracle Application Server) in the network. It functions as the executor of jobs and events sent by the Console via the Oracle Management Servers. The Agent can function regardless of the status of the Console or network connections.

> **Note:** The Oracle Application Server is not required if you start the Enterprise Manager database administration applications as separate stand-alone applications. For more information, see the *Oracle Enterprise Manager Configuration Guide*.

Enterprise Manager Integration Steps

> **Note:** You must have the Enterprise Manager Intelligent Agent, EM, installed on the machine running Oracle Application Server to integrate it with the EM. Do not install EM in the same ORACLE_HOME as Oracle Application Server.

The following instructions integrate Enterprise Manager with Oracle Application Server:

1. Start the Node Manager on Oracle Application Server.

2. Run the Enterprise Manager integration scripts manually.

> **Note:** The Enterprise Manager Intelligent Agent must be stopped before running the integration scripts. The lsnrctl utility is used to stop, start, and monitor the agent.
>
> To determine the status of the agent,
>
> -   Enter the command: `lsnrctl dbsnmp_status`
>
> If the agent is running,
>
> -   Enter the command: `lsnrctl dbsnmp_stop`

```
% $ORAWEB_HOME/install/owsem.sh
% su root
% $ORAWEB_HOME/install/update_oratab.sh
```

3. Verify that the Oracle Application Server is installed on the machine running the Enterprise Manager, EM.

   a. Restart the Oracle Installer and select Custom Installation.

   b. View the list of products installed to see if the Oracle Application Server has been installed. If it has not been installed, do so now. Do not install.

4. Start the Agent on the machine running Oracle Application Server.

   Enter the command:

   `lsnrctl dbsnmp_start`

5. Run the Auto-Discovery Tool from the Enterprise Manager.

   a. Select Programs > Oracle Enterprise Manager > Enterprise Manager.

   b. Enter a Username and Password for the database.

c. From the Oracle Enterprise Manager window, select <u>N</u>avigator > Service Discovery > Discover New Services.
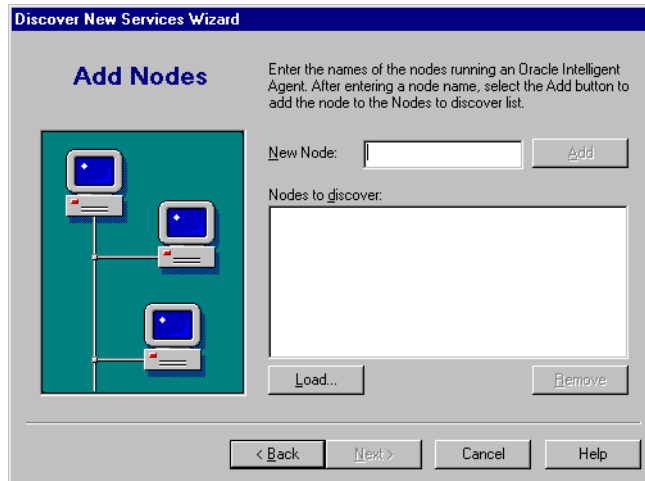
Figure A–1   Discover New Services
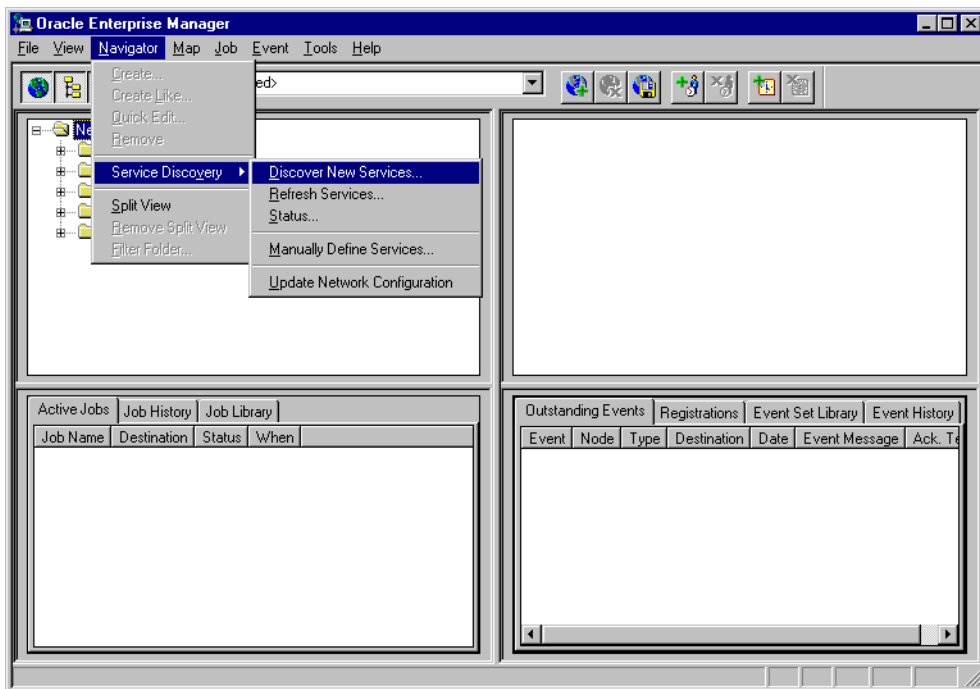
d. Select Next at the Introduction screen.
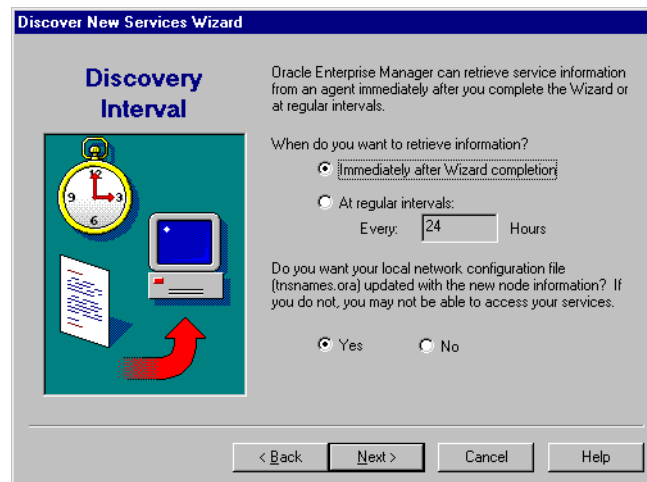
e. The Discover New Services Wizard appears.

f. Enter the name of the node on which Oracle Application Server is running and Select Add, then Next.

Figure A–2   Adding a node

The Discovery Interval screen appears.

Figure A–3   Discovery Interval

g. Enter your selections for when you want to retrieve information and if you want to update the **tnsnames.ora** file and select Next.

   The Summary page appears.

h. Select Finish if the information is correct.

i. The Wizard begins searching for the specified node.

j. Select Close when the Discover New Services tool has located the node running the Agent.

Figure A–4   Discover New Service tool
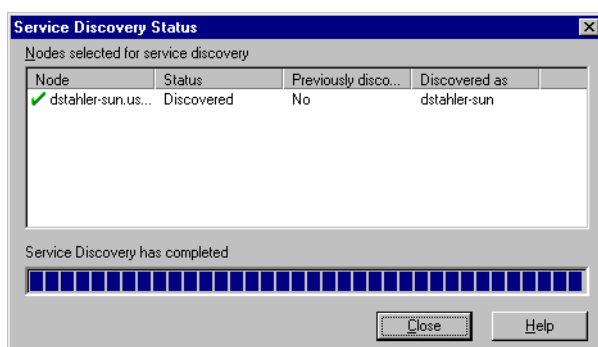
k. Expand the Application Servers folder under Networks.

l. Highlight your Oracle Application Server listener and select Navigator > Quick Edit. (You can also right-click on the Oracle Application Server listener.)

   This action launches a browser window and prompts you with the required username and password specified during installation.

YOU HAVE COMPLETED THE INTEGRATION!

B

Oracle Installer Information

This appendix contains supplementary information about the Installer and the installation process.

Contents

- Troubleshooting the Installer
- Navigating the Installer in Character Mode
- Using the Installer in Silent Mode
- Installer Help System
- Relinking Error Messages

Troubleshooting the Installer

This section describes problems you may encounter when running the Installer and provides suggestions for fixing those problems.

Display Problems

If you run the Installer in character mode from an OpenWindows **shelltool** or **cmd-tool**, the screen may be difficult to read.

To fix the display for a **shelltool**:

```
$ shelltool -B Offset_x
```

To fix the display for a **cmdtool**:

```
$ cmdtool -B Offset_x
```

To permanently fix the display problem, add the following entry to the **.Xdefaults** file:

```
term.boldStyle: Offset_X
```

Screen Refresh

To refresh the Installer screen during an installation session, enter:

```
[Ctrl]+[r]
```

Insufficient Disk Space

If the session terminates because the Installer runs out of space during installation, check $ORACLE_HOME for any files installed before the session terminated. Remove any files for products you were installing. If you were installing from a temporary staging directory, clean out that directory and rebuild it before attempting to re-install.

After you have cleaned up the $ORACLE_HOME directory, use the **df** command to determine how much space is available.

> **Note:** Oracle Application Server cannot share the same ORACLE_HOME with any other Oracle products. If you already have an Oracle database, then the Oracle Application Server must be installed in a different ORACLE_HOME directory.

Space in $ORACLE_HOME

When the Installer calculates space for transferring files into $ORACLE_HOME, it accounts for product dependencies. If the Installer detects there is insufficient space, it issues a warning.

Files are uncompressed when they are transferred to $ORACLE_HOME.

Symbolic Links

If you have created symbolic links in $ORACLE_HOME to accommodate parts of the Oracle distribution, the Installer does not follow these links when it calculates space requirements.

If you are sure symbolic links are set up correctly and there is enough space in $ORACLE_HOME to install the distribution, ignore the Installer warnings regard-

ing insufficient space. Make sure the linked directories have read and write permissions for *oracle*.

Swap Space

The swap space on the disk should be two to four times the physical RAM. If the UNIX system uses swap space for relinking, you probably need to increase the size of the swap space. If you run out of swap space during the relinking of product executables, the Installer returns an error message and aborts the session.

Relinking Error Messages

The following error messages can occur during relinking:

Message:	sh: make: Not found
Cause:	Operating system program (`make`) not available: install it or put it in PATH.
Message:	sh: sh (echoed): cc: Not found
Cause:	Operating system program (`cc`) not available: install it or put it in your search path.
Message:	ld: fatal error: library not found: *library_name*
Cause:	Operating system library not loaded: *library_name* indicates the name of the library you must install.

Undefined Symbols

Many relinking errors are caused by undefined symbols. Symbols may be undefined when Oracle Net8 protocol adapters are installed without the correct underlying network protocol.

For instance, `putmesg` and `getmesg` undefined symbols occur if you install the Oracle SPX/IPX Protocol Adapter, but do not have SPX/IPX installed.

Most of these errors can be corrected by de-installing and re-installing the Oracle system, without the protocol adapter for which you do not have the network software.

Staging Area Problems

The following issues can arise when installing from a staging area.

Adding Files
Do not attempt to add files to an existing staging area. If you want to add a product to an existing staging area, or if it is necessary to recreate a staging area, you must delete all existing files before using the Installer to create the new one.

User Errors

The following is a list of common error messages and their causes:

"Cannot Create File"
If the Installer returns a message that it is unable to create a file, you are probably trying to install to a location where the *oracle* account does not have write permission. Use a shell window to change the permissions of the desired directory and retry the operation, or restart the Installer session and specify a different location where the *oracle* account has write permission.

"Cannot Find File"
If the Installer is unable to find a file, check to make sure that you specified the correct location for the CD-ROM, staging area, or link directory from which you are installing. In particular, make sure you did not specify the ORACLE_HOME directory (that is, your destination directory) as the installation source directory.

If the installation source is correctly specified and you are installing from a link directory or staging area, try recreating the installation source.

"Connection Not Allowed..."
Messages like the following can occur in a networked environment, when you are logging into a remote machine to run the Installer:

```
Xlib: connection to "unixdoc8:0.0" refused by server
Xlib: Client is not authorized to connect to Server
```

In a terminal window logged into your local machine, authorize the connection:

```
$ xhost + machine_with_Installer
```

Try restarting the Installer on the remote machine. If authentication problems persist, another possible workaround is to run the Installer in character mode, rather than Motif.

"Database Creation Failed"
If the Installer returns a message that it is unable to create the database, make sure there is not an Oracle instance running with a *sid* matching the *sid* (instance name) you specified during the Installation:

```
ps –ef | grep _sid
```

Check the **$ORACLE_HOME/orainst/sql.log** file for other possible problems.

"libXm.so..."
A message like the following indicates the LD_LIBRARY_PATH environment variable is not set correctly:

```
ld.so.1: ./orainst.motif: fatal: libXm.so.3: can't open file: errno=2
Killed
```

Set LD_LIBRARY_PATH to include **$ORACLE_HOME/lib** and the directory containing Motif libraries and retry the Installer.

Display Problems
If you have problems with the display, navigation buttons, or commands, check that the ORACLE_TERM environment variable is set correctly.

"Not Owner..."
Verify that $USER is the same as the userID of the current user (the *oracle* account). The following two commands should return the same user:

```
$ echo $USER
$ id
```

Navigating the Installer in Character Mode

You have the option to run the Installer in character mode. You must use the keyboard to navigate through the windows and screens displayed during an installation. To start the Installer in Character mode:

1. Log in as *oracle* user.

2. `cd` to the **orainst** directory.

3. Enter `orainst`.

Navigation Keys

Use the following keys to navigate through Installer screens:

- [Return] invokes an action and proceeds to the next screen.

- [Space Bar] selects or deselects an item from a list.

- [Tab] progresses from field to field within the screen.

- [Arrow Keys] move horizontally or vertically through a list or menu.

Commands and Buttons

Installer screens include the following buttons:

- **Back** moves you to a previous input screen.
- **Cancel** exits the Installer session.

The following buttons are available only at the Software Asset Manager screen:

- **From** displays a file browsing window to facilitate finding required product files.
- **Options** displays advanced options available to the user.
- **View Log** displays installation log viewing options (you can specify the log file to be viewed and the level of detail.)

> **Note:** The **Cancel** Button is labeled **Exit** in the Software Asset Manager screen.

Using the Installer in Silent Mode

If you are performing multiple installations that are identical or similar to each other, you may want to run the Installer in silent mode after the initial installation. Do this by creating a response file, then using the response file to provide answers to Installer prompts in subsequent installations.

To use the Installer in silent mode (examples show running the Installer under Motif):

1. Run the Installer for the initial installation, recording your answers to prompts in a response file.

   ```
   $ ./orainst /m /rspdest filename
   ```

   where *filename* is the full pathname of the response file where the Installer will record your answers. Be sure to specify a directory where you have write permission.

2. Edit the response file, changing any necessary values (for example, pathnames, mount points, ORACLE_SID, etc.). Use any UNIX text editor.

3. Invoke the Installer, specifying the response file and products to install.

```
$ ./orainst /m /rspsrc filename /install products /silent
```

where *filename* is the full pathname of the response file you created in a previous installation

and

products is a comma-separated (no spaces) list of products to install. Available products and the product names to use in the command line are available in the **unix.prd** file in your staging area directory.

Following is an example of the commands to invoke the Installer and create a response file, then use that response file in a subsequent installation. The products specified for installation are Oracle RDBMS Server, Server Manager (Motif mode), and Oracle Names Server.

```
$ ./orainst /m /rspdest resp_732
$ ./orainst /m /rspsrc resp_732 /install rdbms,svrmgrm,NAMES /silent
```

> **Attention:** Only use silent mode to install the same products you installed during the initial installation, or a subset of them.

Installer Help System

You can invoke Installer online help with the Help button in either Motif or character mode. When you select the Help button, the Installer displays help text.

Relinking Error Messages

The system can display the following errors during relinking.

Message:	`sh:  make:  Not found`
Action:	Operating system program (**make**) not available: install it or put it in **$PATH**.
Message:	`sh:  sh (echodo):  cc:  Not found`
Action:	Operating system program (**cc**) not available: install it or put it in **$PATH**.
Message:	`ld: fatal error: library not found: library_name`
Action:	Operating system library not loaded: *library_name* indicates the name of the library you must install.

Message:	`ld: archive out of date for libxxx.a`
Action:	Run the **ranlib** utility on the library.

Undefined Symbols

Many relinking errors are caused by undefined symbols. Symbols may be undefined when SQL*Net network protocol adapters are installed without the correct underlying network protocol.

For instance, *putmesg* and *getmesg* undefined symbols occur if you install the Oracle SPX/IPX Protocol Adapter, but do not have SPX/IPX installed.

C

Environment Variables

Contents

The following environment variables are available to you within your working environment. During installation you can elect to have the Oracle Installer automatically update your **.cshrc**, **.login**, and **.profile** files with many of the necessary environment variables listed here; however, you can also set these variables manually.

- ORACLE_HOME
- ORACLE_BASE
- ORACLE_TERM
- ORAWEB_HOME
- ORAWEB_SITE
- TNS_ADMIN
- LD_LIBRARY_PATH
- CLASSPATH
- PATH
- TMPDIR
- ORACLE_SID
- ORB_HOME

ORACLE_HOME

Oracle Application Server uses the variable ORACLE_HOME during installation. The ORACLE_HOME is the root or base directory in which Oracle software is

installed. If you already have an Oracle database, Oracle Application Server must be installed in different ORACLE_HOME as the database. If you do not already have an Oracle database, you can select any directory/file as your ORACLE_HOME.

ORACLE_BASE

Under an OFA directory structure (for more info about OFA, see "Determine directory structure." on page 1-5), you define ORACLE_BASE as the directory where you want to install Oracle products. A product directory (**/ORACLE_BASE/product**) and a configuration directory (**/ORACLE_BASE/admin**) are created under ORACLE_BASE. In the product directory, you will find ORACLE_HOME, and all product files. In the admin directory, you will find configuration files and log files.

ORACLE_TERM

This environment variable must be set before installation. ORACLE_TERM specifies the terminal definition resource file to be used with the Installer. If ORACLE_TERM is not set, the Installer uses the value of the UNIX environment variable TERM and searches for an equivalent ORACLE_TERM resource file.

The following table lists common ORACLE_TERM settings:

Table C–1   ORACLE_TERM values

To run:	Set ORACLE_TERM to:
ANSI terminal for SCO	ansi
AT386 console	386
AT386 xterm	386x
UnixWare terminal	386u
Solaris x86 xterm	386s
Data General 200	dgd2
Data General 400	dgd4
IBM High Function terminal and aixterm (monochrome)	hft
IBM High Function terminal and aixterm (color)	hftc

Table C–1   ORACLE_TERM values

To run:	Set ORACLE_TERM to:
hpterm terminal emulator and HP 700/9x terminal	hpterm
IBM 3151 terminal	3151 (for IBM)
NCD X terminal with vt220 style keyboard	ncd220
cmdtool/shelltool using a type 4 keyboard	sun
cmdtool/shelltool using a type 5 keyboard	sun5
vt100 terminal	vt100
vt220 terminal	vt220
Wyse 50 or 60 terminal	wy50
Wyse 150 terminal	wy150
xterm using a type 4 keyboard	xsun
xterm using a type 5 keyboard	xsun5

Exporting ORACLE_TERMS

Those who use ksh, bash, and sh shells might receive the error message, "Please set your TERM variables to one of the supported terminals" although ORACLE_TERM or TERM is set properly. If this is the case, you also need to use the command:

```
export ORACLE_TERM
```

To verify that your ORACLE_TERM is set and visible by the Installer, use the command:

```
export|grep ORACLE_TERM
```

If ORACLE_TERM is set correctly, the command will return the value of ORACLE_TERM (for example, ORACLE_TERM=xterm).

ORAWEB_HOME

ORAWEB_HOME specifies the directory where Oracle Application Server is to be installed. For Release 4.0.8.1, ORAWEB_HOME must be set to **$ORACLE_HOME/ ows/4.0**

ORAWEB_SITE

ORAWEB_SITE specifies the Oracle Application Server site name. This is used because there can be more than one site on a single node. The default is "website40".

TNS_ADMIN

The TNS_ADMIN environment variable needs to be set to the location of the machine's SQL*Net configuration files. If none exist, they should be created and setup as detailed in the SQL*Net documentation.

LD_LIBRARY_PATH

This variable points to where the libraries are located. This should be set to:

$ORACLE_HOME/orb/4.0/lib:$ORAWEB_HOME/lib

CLASSPATH

CLASSPATH should be set to include:

$ORAWEB_HOME/classes:$ORAWEB_HOME/admin

PATH

PATH defines the search path for executables. The PATH environment variable must include the following:

- **$ORAWEB_HOME/bin**

- **$ORACLE_HOME/bin**

- **$ORACLE_HOME/orb/4.0/bin**

- **$ORACLE_HOME/orb/4.0/admin/cgi**

- **$ORAWEB_HOME/admin/cgi**

- The directory where the script **oraenv** (Bourne or Korn shell) or **coraenv** (C shell) will reside. By default, this is **/opt/bin** on Solaris 2.x. These scripts allow the database administrator to set a common environment for all users, and make it easier for individual users to move between databases.

- C compiler directory (required only if you are using Pro*C)

- **/bin**

- **/usr/bin**

- **/usr/ccs/bin**

- **.** (to reference your current directory)

- **make** utility directory

> **Attention:** If you require **/usr/ucb** in your path, put it at the end
> of the PATH environment variable list; otherwise, it may cause
> installation problems. Make sure **/usr/ccs/bin** is before **/usr/ucb** in
> your PATH.

TMPDIR

Relinking uses space in the **/tmp** or **/var/tmp** directories. If you specify relinking
during your Installer session, you must have sufficient temporary space.

If your system, like many Solaris 2.x systems, has a small **/tmp** or **/var/tmp** direc-
tory, set the TMPDIR environment variable to an area containing more space. On
Solaris 2.x systems, 20 MB should be sufficient.

After setting TMPDIR, make the directory globally accessible:

```
$ chmod 777 $TMPDIR
```

ORACLE_SID

ORACLE_SID specifies the value of the system identifier (sid) of the Oracle
RDBMS Server against which you are installing Oracle Application Server. For a
single-instance database, the *sid* value should be the same as the name of the data-
base it manipulates, and should be no longer than four characters.

ORB_HOME

Specifies the location of the ORB binary files.

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